DOCTOR: All Memberships Expire December 31st. See Your County Secretary

THE JOURNAL
OF THE
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXIV MUSKOGEE, OKLAHOMA, DECEMBER, 1931. NUMBER 12

Published Monthly at Muskogee, Oklahoma, under direction of the Council.

TERRELL'S LABORATORIES

North Texas and Oklahoma Pasteur Institutes

PATHOLOGICAL BACTERIOLOGICAL SEROLOGICAL CHEMICAL

FT. WORTH - MUSKOGEE - AMARILLO

X-RAY *and* RADIUM DEPT.

FORT WORTH

Doctor: ***Co-operative Diagnosis and Hospitalization***

Provided at Reasonable Fees to Your Patients Without Delay
IN ONE INSTITUTION.

Immediate Report to referring Physician. You will not lose contact with patient after diagnosis or operation. We encourage close co-operation of patient with referring doctor.

Complete Facilities in

CLINICAL LABORATORY . X-RAY . PHYSICAL THERAPY DEPT.
GENERAL SURGERY . BONE SURGERY
SPECIAL SURGERY

Hospital and Clinic Under Direct Control of Medical Staff

SISLER HOSPITAL

807 S. Elgin L. D. 535—Telephones—4-8161 *Tulsa, Okla.*

TABLE OF CONTENTS PAGE IV

Announcements

1. Simple, quick laboratory test for early diagnosis of pregnancy as reported by Drs. Friedman and Lapham of the University of Pennsylvania in the March issue of American Journal of Obstetrics and Gynecology.
    1. Positive within one week following cessation of Menses.
    2. 3 ounces non-preserved sample of urine shipped in cold thermos container is all that is required from patient.
    3. Test requires only 48 hours' time.
    4. In series reported to date, test has been 100% accurate.
    5. Based on production of corpora hemorrhagica on ovary of non-pregnant rabbit.
    6. Thermos containers furnished upon request.
    7. Fee is $10.00. Reports wired.

2. Reduction in price of Antirabic Vaccine.
    1. Semple method, 14 doses.
    2. U. S. Government License No. 98.
    3. Product approved by Council on Pharmacy and Chemistry of A. M. A.
    4. Price now $14.00, lowest in the United States.
    5. Wire collect for treatments.

Medical Arts Laboratory, Inc.

802 Medical Arts Building

OKLAHOMA CITY, OKLAHOMA

24, 1931, L2

Diagnostic Laboratories

prepared to do all types of laboratory tests which aid in diagnosis, including:

Biopsy Specimens
Basal Metabolism
Surgical Specimens
Animal Innoculations
Post Mortem Specimens
Dark Field Examinations
Post Mortem Examinations
Blood and Urine Chemistry
X-RAY EXAMINATIONS, ALL TYPES

SEROLOGY—including Kolmer's Standard Wassermann; very sensitive Precipitation tests, Kahn, Kline's slide test; and special exclusion test useful in many cases when exclusion of Syphilis is important.

BACTERIOLOGICAL EXAMINATIONS of all types, including Widals, Sputum for T. B., Stool examinations, Agglutination tests for MALTA FEVER, and tests for Tularemia, etc.

Containers Mailed on Request.

SPECIAL RATES TO HOSPITALS AND CLINICS.

J. SCHAEFER,
Bacteriologist.

HUGH JETER, M. D.,
Director and Pathologist.

1200 North Walker. Oklahoma City.

INDEX TO CONTENTS

VOL. XXIV DECEMBER, 1931. No. 12

Page

The Treatment of Pneumonia With Special Reference to Glucose Therapy and Theories As to Its Probable Action
E. Eldon Baum, M.D.
Tulsa 373

Some Observations On Specific Therapy in the Infectious Diseases
J. H. Musser, M.D.
New Orleans 377

Fusospirochaetal Infection of the Gastro-intestinal Tract
Francis M. Duffy, M.A., M.D.
Enid 380

Complications of Treatment for Syphilis
James Stevenson, M.D.
Tulsa 385

Cysts of the Urachus—Case Reports
LeRoy Long, M.D.
Oklahoma City 388

Why Drain the Peritoneal Cavity
Ross Grosshart, M.D.
Tulsa 392

Some Surgical Browsing
F. L. Watson, M.D.
McAlester 394

Intravenous Anesthesia With Sodium Amytal in Surgery
A. L. Blesh, M.D., F.A.C.S.
Oklahoma City 396

Extra Uterine Gestation
Jas. L. Shuler, M.D.
Durant 400

Anemia—Report of the Case of Miss K.
Wann Langston, M.D., F. A. C. P.
Oklahoma City 404

Rare Orbital Tumor in a Child—(Epithelioma Adenoides Cysticum)—Case Report
Arthur H. Davis, M.D.
D. L. Garrett, M.D.
Tulsa 406

EDITORIAL

Our New Moving Picture Films 408
Grape Wine Concentrate Loses Out 409
Why Such A Hurry? 409
To Society Officers and All Members 409
Editorial Notes—Personal and General 410
Obituary 412-413

Abstract Department:
Surgery and Gynecology 414
Dermatology and Syphilology 416
Tuberculosis 417

Book Review 418-419
Miscellaneous:
376-387-391-394-395-399-404-405-407

The
PEARSON SCHOOL
(SUCCESSOR TO THE SOUTHARD SCHOOL)
FOR
Exceptional Children

An all year round home-school-camp for nervous, backward and problem children of any age. Experienced teachers. Individual instruction. Pupils from six States. Enrollment limited. Private home atmosphere. Flower and vegetable gardens. Playground equipment. Complete physical and psychological examinations. Medical service. School under direction of founders. Chartered. Literature upon request.

Stella R. Pearson, Director and Psychologist
Lulu P. Holcombe, Superintendent

23rd to 24th Street on Arline
Muskogee, Oklahoma

Mercurochrome
—220 Soluble
Dibrom-Oxymercuri-Fluorescein)

THE STAIN PROVIDES FOR PENETRATION
And
FIXES THE GERMICIDE IN THE TISSUES

Mercurochrome is bacteriostatic in exceedingly high dilutions and as long as the stain is visible bacteriostasis is present. Reinfection or contamination are prevented and natural body defenses are permitted to hasten prompt and clean healing, as Mercurochrome does not interfere with immunological processes. This germicide is non-irritating and non-injurious when applied to wounds.

HYNSON, WESTCOTT & DUNNING
Baltimore, Maryland

THE JOURNAL

OF THE

OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XXIV MUSKOGEE, OKLAHOMA, DECEMBER, 1931. NUMBER 12

THE TREATMENT OF PNEUMONIA WITH SPECIAL REFERENCE TO GLUCOSE THERAPY AND THEORIES AS TO IT'S PROBABLE ACTION.

E. ELDON BAUM, M.D.
TULSA

When a man of the ability of Sir William Osler shows his respects to the dread disease of pneumonia, by honoring it with the sobriquet, "Captain of the Men of Death," it would be absurd for the author of this paper to come before you as a prophet from a strange land with a new and absolute panacea for this disease. On the contrary, this paper is presented with the author fully aware of all of the dangers of drawing final conclusions, making any superlative statements, or championing any one therapeutic measure to the exclusion of all others for a disease so deadly in its effect upon its victims. Since the time of Galen and Hippocrates, this disease has attracted the attention of the medical profession with scarcely any appreciable decrease in the mortality rate, until recently, when it appears as though a step toward its abolition has been made in the right direction. The major portion of this paper will deal with glucose in the treatment of pneumonia as a result of some outstanding results obtained by the author, but who knows, that this method of treatment may be destined to the same iniquitous death as many of the myriads of other forms of therapy that have been advocated since time immemorial.

DIGITALIS THERAPY

To many of us, this drug has been like the spar to the ship wrecked voyager, but Bethea of New Orleans[1], in a recent article specifically interdicts the use of this drug in his routine unless auricular fibrillation or flutter occurs. He prefers to use large doses of sodium citrate, forty grains every two hours, to be discontinued if evidence of pulmonary edema appears, and when stimulation is necessary, he recommends the use of aromatic spirits of ammonia. Recent investigations conducted at Cornell University, Columbia University and Bellevue Hospitals under the able leadership of John Wycoff and others[2] with carefully established controls, it has been rather conclusively proven that the routine administration of digitalis, as soon as the diagnosis of pneumonia is made, is not only of no value, but even dangerous since, in their series of cases the mortality rate was actually increased. Norris-Landis[3] in their new book call attention to Gibson's rule for the administration of this drug in pneumonia, which is probably more logical. For those of us who may have forgotten this rule, it follows: "When the blood pressure expressed in millimeters, does not fall below the pulse rate expressed in beats per minute, the patient is in no immediate danger, but when the ratio becomes reversed, it is the signal for stimulation. In a case which the author recently treated with glucose, and will be presented further on with some detail, the pulse rate exceeded the blood pressure expressed in millimeters from the onset of his pneumonic symptoms. Furthermore, he developed a definite auricular fibrillation, a systolic murmur at the apex transmitted to the axilla, which disappeared as his blood pressure declined, his pulse weakened, and his pulse pressure widened. Digitalis per mouth had already been started, but the necessity for rapid digitallization in such a clinical picture was paramount. With such a definite picture of cardiac decompensation, one might logically question the absorptive power of his gastro-intestinal tract due to the passive congestion coincident with his impaired circulation. Consequently, it was decided among the consultants to administer the drug hypodermically in the form of "digifoline." Within the next forty-eight hours, a total of sixteen, one and one-half c.c. ampules were given with only large painful areas of induration and ecchemosis remaining as the sole evidence of its administration since no pharmacological or physiological effects were ever apparent. After the administration of glucose, his condition improved sufficiently to warrant the resumption of digitalis by

mouth in the form of the standard tincture, with the usual therapeutic effects noted in about twelve hours.

SPECIFIC THERAPY

This form of treatment was first introduced in Germany by Neufeld in 1910, and in this country three years later by Cole. So promising is this form of therapy that the importance of early typing of all pneumonia cases, especially those in young adults cannot be overemphasized. A very rapid method of typing has been developed by Sabin'. A few statistics will show the apparent value of this form of treatment. Cecil, Baldwin and Larsen have shown type I pneumococcus to be the predominating organism in 246 out of 585 cases of frank lobar pneumonia in patients under thirty years of age, an incidence of 42%. Cecil and Plummer' at Bellevue Hospital reported 1,131 cases of type I infections out of 3,662 admissions to that hospital for pneumonia, or a percentage of 30.9%. Cole, in a series of cases, reported an incidence of 33.3% type I infections, while Park, Bullowa, and Rosenbluth, working in their group found type I pneumococcus to be predominant in 28.5% of their cases. When we reflect upon these figures and note the comparatively high percentage of cases that might be saved by the timely use of specific type I antiserum, the day may be dawning, when pneumonia, like tuberculosis, must surrender its long possessed title of "Captain of the Men of Death," to some other disease. Where specific serum is given early, the mortality rate is markedly reduced and the clinical results outstanding, since convalescence is almost complete within twenty-four hours after beginning treatment. Unfortunately, the incidence of type I infections is much lower in children and older persons. Without discussing the merits of the various types of sera available on the market for the general practitioner, it will suffice here to mention those used in the original investigations, *namely*, immune whole serum, Huntoon's anti-body solution, and Felton's concentrated serum. In a series of cases received at Bellevue and Rockefeller Institute Hospitals, where an equal number of cases with and without serum were selected on the basis of time elapsing since the onset of symptoms and the administration of the serum, the mortality rate with these various preparations was reduced from 28-30% in those not receiving serum to 10.2-11.6% in those receiving serum. This is quite a worthy decrease. Such an appreciable decrease in mortality is well worth the time and trouble incident to the typing of all pneumonia cases, especially those occurring in young adults.

GLUCOSE THERAPY

One of the most outstanding cases, in the author's experience, in which this form of treatment was used, was a young man aged 27, a clerk by occupation, 74½ inches tall, weighing 210 pounds, who was seized suddenly with a severe pain in his right chest while returning to Tulsa from a Christmas visit. This pain was so severe that it incapacitated him to such an extent that his wife was compelled to drive the remaining five miles home. Upon his arrival home, strapping of his chest failed to relieve the pain, necessitating the administration of narcotics in large doses, before any decline in his pain was noticed. Because of his history and physical findings, it appeared to be a case of a severe acute pleurisy with an impending pneumonia. Two days later the patient developed all of the classical symptoms of pneumonia with a profound toxemia, obstinate singultus, and rapid cardiac decompensation. On the morning of December 28th, consultation was had and the patient sent in to the hospital, where he continued to become progressively worse in spite of all efforts to relieve him.

In presenting this form of therauy, credit is due to Beckman's Treatment in General Practice, published by W. B. Saunders Co., for the suggestion regarding the brilliant results obtained with glucose in the treatment of pneumonia. This patient was in extremis by 2:30 A. M., December 29th, 1930, just four days after his initial symptoms, and the timely administration of ½ c.c. of adrenalin revived him sufficiently so that it was possible to begin the administration of glucose intravenously as a last resort. It would have been much better, perhaps, to have used glucose as a first resort, but because of his extremely weakened cardiac condition, the advisability of adding any additional burden in the form of intravenous therapy appeared very hazardous. Up to this point the pulse record as shown on the nurse's chart was either blank, because the pulse was not palpable, or, when faintly palpable was invariably followed by a question mark. After the second injection of glucose the pulse record reappeared without question marks. All of these changes appeared

within six hours after beginning treatment. It was also unnecessary to continue the administration of oxygen for the profound cyanosis that persisted up until the administration of glucose. Within thirty-six hours the patient was hungry and requested more food. The singultus and meteorism continued to be serious and very troublesome complications. However, the former was satisfactorily controlled with Hoffman's anodyne and chloroform, while the latter was minimized to some extent by hot stupes, colon tube, enemata and pituitrin. Digitalis cannot be credited with these results, since the usual pharmacological effects of digitalis did not manifest themselves until some twelve hours later after the oral administration of the standard tincture was resumed.

In all probability, it would be disastrous to give such a patient glucose solution in any large quantity. The problem then, is how to give a therapeutic amount without taxing a heart muscle already overburdened by blood volume, and devitalized by starvation, anoxemia and toxemia. The solution to the problem appears in the administration of small quantities of concentrated solution at frequent intervals. As an initial dose, fifty c.c. of a twenty-five percent solution is given with a large syringe and a twenty-two guage intravenous needle, taking fully thirty minutes by watch to administer. It may seem far fetched and arouse some skepticism to say that the results are immediately manifest by improvement in the cyanosis, heart action, respiration, pulse quality and the general appearance of the patient, but such is usually the case. This procedure is repeated at approximately four hour intervals during the next four or five days and nights, gradually increasing the amount and dilution until the patient is getting 200 c.c. of a twelve and one-half percent solution at four hour intervals. At the latter dilution it is possible to give the solution by gravity with an ordinary infusion flask, which is not the case with the more concentrated solutions since the viscosity is too great to flow freely by gravity. No doubt, the question of damage to the venous wall by these concentrated solutions has arisen, and truly enough, the sclerosis at the site of each injection is quite a troublesome problem making it necessary to find a new site of injection each time.

THEORIES EXPLAINING THE PROBABLE MODE OF ACTION OF GLUCOSE

Before attempting to explain the probable or possible modus operandi of this modality, let it be understood that all statements are purely theoretical. The beneficial results obtained from glucose post-operatively and in the convulsions of eclampsia are common knowledge. Kisthimios and Gomez[4], in a recent article, have called attention to the beneficial results obtained from glucose and digitalis in the treatment of cardiac insufficiency. Physiologically, the muscle tissues including heart muscle and the liver have the power of readily converting glucose to glycogen and glycogen to glucose depending upon the bodily needs. Glucose is already partially oxidized and readily assimilable, but must be first converted to glycogen before it can be utilized by the tissues. In this process of furnishing energy for various decompositions and bodily activities, it is reduced to alcohol, carbon dioxide, fatty acids and water. It has also been conclusively shown that tissues deprived of oxygen live much longer when supplied with glucose[1]. In a patient suffering with pneumonia, having much of the lung aerating space completely filled with exudate, a blood stream overwhelmed with toxic products, thus interfering with its oxygen combining power, a sluggish heart probably starved by the lack of glycogen and oxygen, possibly glucose offers to the tissues that stimulus necessary to tide them over the crisis and lack of oxygen.

In health, it is possible for the animal body to synthesize glycogen from carbohydrates, proteins, and to a slight degree from fats. It is also possible for the animal organism to synthesize glycogen from various amino acids as glycocoll, alanine, aspartic acid, glutamic acid and tyrosine. This synthesis is, at least, in part, performed by the liver after the deamination of the amino acids in the intestinal wall before being carried to the liver in the portal circulation. Here again, oxygen is a prerequisite for this transformation. It is logical to assume, that because of the anoxemia of pneumonia, the stored glycogen is soon depleted and unable to be replenished by the liver and muscle tissues. Another possible assumption is that, the liver, in endeavoring to free the organism of toxemia, puts its function of detoxification to the fore at the expense of its glycogenic function. Koster[2] and others have

shown that the administration of glucose causes marked changes in the Kupfer cells of the liver and attribute the beneficial results from glucose to the stimulation of the reticulo-endothelial system.

Anorexia is also an important factor in pneumonia. Voit' has shown that by starving hens and rabbits for five days, he was able to reduce the glycogen stores to a minimum. After feeding glucose, he found 15.34% and 16.85% glycogen in the liver, which was a much higher percentage than when levulose, lactose, galactose, sucrose or maltose were given. In the rabbit which received 50 grams, he found 9.269 grams of glycogen in the liver, and 8.972 grams in the remainder of the entire body, thus showing the importance of the liver as a store house for glycogen. This opens the way for the theory that the liver, possibly, not only acts as a storage space for glycogen, but this polysaccharide is a prerequisite to its function as a detoxicating organ.

The anorexia of pneumonia may be nature's subtle way of informing the patient that his gastro-intestinal tract is water logged by passive congestion and unable to absorb any food. Because glucose is probably next to alcohol in being the most readily assimilable food, requiring less metabolic effort to convert it into useful tissue substances, therefore, can we not assume that a toxic organism, unable to utilize more complex molecules readily, through a poorly functioning gastro-intestinal tract, easily appropriates intravenous gulcose to satisfy the bodily needs?

Let us now consider the heart. Matthews has shown that the dog's heart, in health, contains .709 and .576% glycogen, while the skeletal muscle contains .15-.3% glycogen. From these figures, it appears that the heart is a great user, as well as, a great store house for glycogen, second in importance to the liver. Norris-Landis claim that the capillary beds between the exudate filled alveoli are not occluded in pneumonia, unless a megalocyte, too large to pass through the lumen, becomes lodged, thus acting as a thrombus. If this be true, the probability is that the heart does not fail as a result of the back pressure offered by the massively consolidated lung. In the face of this assumption, it may be more logical to assume that the heart fails as a result of the lack of oxygen and glycogen.

The clearing of the cyanosis might be easily explained on the basis of the liberation of carbon dioxide in the metabolism of glucose, which act as a stimulus to the respiratory apparatus.

The improvement in the kidney function is probably due to the improvement in the general circulation, or to the improvement in oxidation with better preparation of the metabolic product brought to the kidney for excretion, or it may be due to the increased oxygen supplied to that organ after the administration of glucose. There is a marked improvement in the fluid intake and output, which may play some part in the improvement in the kidney function.

In conclusion it may be well to repeat the importance of early typing of all pneumonia patients, especially those cases occurring in young adults and that the statements made in an effort to explain the possible action of glucose are purely theoretical.

510 Medical Arts Building.

BIBLIOGRAPHY

1. A.M.A. Jour. Sept. 27, 1930 p925.
2. A.M.A. Jour. Oct. 25, 1930 p1243.
3. Diseases of the Chest. Norris-Landis. Third Edition 1924, Saunders
4. Pro. Soc. exp. Biol. & Med. 26:492-494, March, 1929.
5. A.M.A. Jour. Nov. 22, 1930 p1547.
6. A.M.A. Jour. Dec. 20, 1930.
7. Matthews Physiological Chemistry Third Edition. Wm. Wood & Co.
8. A.M.A. Jour. 1930 p370.
9. Matthew's Physiological Chemistry. Third Edition. Wm. Wood & Co.
10. Howell's Physiology. Seventh Edition. W. B. Saunders.
11. Text-book of Pathology. McCallum Saunders.
12. Osler-McCrae. Principles and Practice of Medicine. Tenth Edition. Appleton.

SHOULD COD LIVER OIL BE FLAVORED?

It is a well-known fact that young infants shy at aromatics. Older patients often tire of flavored medications to the point where the flavoring itself becomes repellant. This is particularly true if the flavoring is of a volatile nature or "repeats" hours after being ingested. Physicians have frequently used the terms "fresh," "natural," "sweet," and "nutlike," in commenting upon the fine flavor of Mead's Standardized Cod Liver Oil. They find that most patients prefer an unflavored oil when it is as pure as Mead's.

Physicians who look with disfavor upon self-medication by laymen are interested to know that Mead's is one Standardized Cod Liver Oil that is not advertised to the public and that carries no dosage directions on carton, bottle or circular. Mead Johnson and Company, Evansville, Indiana, U. S. A., Pioneers in Vitamin Research, will be glad to send samples and literature to physicians only.

SOME OBSERVATIONS ON SPECIFIC THERAPY IN THE INFECTIOUS DISEASES

J. H. MUSSER, M.D.
NEW ORLEANS

(From the Department of Medicine, Tulane University School of Medicine, and the Charity Hospital, New Orleans).

One of the real advances in medicine which has occurred during the last several decades lies in the rather general utilization of specific sera in the handling of certain acute infections. Undoubtedly, this particular form of treatment, the administration of specific sera, is the greatest contribution to the therapeusis of disease in the last forty years. Truthfully it might be said that the discovery of an antitoxin for diphtheria by Behring represents for all time one of the out-standing gifts of medical science to humanity. Following this discovery, very general interest was aroused in the subject of methods of elaborating in the blood of an animal, antibodies to combat disease in man, but it has been only a comparatively few years that potent sera have become available for the treatment of a few infections. At the present time a specific serum may be obtained for the treatment of meningococcic meningitis, scarlet fever, tetanus, erysipelas, pneumonia, anthrax, cholera, dysentery, botulism, plague and diphtheria. Some of these sera still lack the test of time; a few of them are *sub judice*. Clendening[1] says that of these, three are of positive value, diphtheria antitoxin, antimeningococcic serum and scarlet fever antitoxin. I would add anti-pneumococcic serum, tetanus antitoxin, and possibly erysipelas and anthrax serum. It is my purpose to very briefly discuss the use of some of these sera as observed in the wards of Charity Hospital in New Orleans and to recount briefly some of the experiences of my colleagues and myself in the treatment of those diseases for which the sera are employed.

MENINGOCOCCIC MENINGITIS

The steadily growing literature on the treatment of meningococcic meningitis by serum and particularly serum when given through the cisterna route, indicates definitely the value of this particular animal product. Last year Garrison[2] went into the details of the treatment of this condition and recounted the excellent results he obtained in the Isolation Hospital in St. Louis. He called attention to the definite lowering of mortality that has taken place as the result of frequently repeated spinal injections, intravenous medication at the onset of the disease and the introduction of serum into the cisterna magna. T. Goldman and A. G. Bowers[3] reported fifty cases in which the anti-meningococcic serum was given by the cisterna route contrasted with forty-eight cases treated by the lumbar puncture method. The patients that received the cisterna puncture method of treatment showed a very much better mortality rate (25.5 per cent) as contrasted with the patients treated by the older method, whose mortality rate was 52.3. These two articles, added to many already written[4], indicate definitely that cisterna puncture is an extremely valuable adjunct to our present method of treatment. They show that intensive treatment of this disease is followed in a fair proportion of cases by a cure. I should like to stress, however, the fact that it is impossible to make a dogmatic statement when a relatively few cases are treated. The infections are notoriously variable in their severity and in the virulency of their causative organisms at various times. In 65 cases which Watkins and I studied intensively in Charity Hospital, there was a mortality rate of 58 per cent. This rate was excellent considering that it includes 14 fulminating cases who died shortly after admission, as well as patients who were admitted as long as five and six days after the origin of symptoms. We felt that with the method now evoked: using the serum intravenously when patients are first taken sick, followed by lumbar puncture and then cisterna puncture, the two alternating and, depending upon the severity of the case, with two or three taps being performed every 24 hours in the first three days, together with the administering of large quantities of serum, averaging 400 c.c. to each patient, the results had been so satisfactory that the ultimate had just been obtained in the treatment of meningitis. However, employing the same form of treatment last fall, there were 17 consecutive patients who died; and yet we had not varied our technic and the polyvalent serum used apparently was specific, judging from agglutination reactions. The type of meningitis seen this past fall was extremely virulent, so that the mortality rate, if we would consider our last 65 cases, was extremely high—much higher than the 65 preceding cases.

In the group of cases intensively studied, judging as a hospital physician, the mortality rate is distinctly affected by several features. In the first place, the patients who recovered showed an average time of 4.4 days between the development of symptoms and the institution of serum therapy; in those who died it was 7.5 days. Patients who present fulminating symptoms almost invariably die. Parenthetically, I might add that I have observed recently many cases much like the following. Ten days ago there was admitted to the hospital, a boy eight years old who apparently had been entirely well up until noon; he went to the house at that time saying he had just developed a headache; shortly afterwards he started to vomit, became unconscious and was dead six hours later. Returning to the prognosis, we have noticed that patients with hemorrhagic rash on admission almost invariably die. We had only one such patient who recovered in our recent series. We noticed also that the death rate among adults is approximately twice that of children. We observed, furthermore, that the spinal cell count is invariably higher in those extremely ill. In our patients who recovered the count was 9,500 per c. mm. on admission, while it averaged 17,500 in the fatal cases. The leukocyte count gave us no definite information. Watkins' was particularly impressed with the prognostic significance of increased spinal sugar. On admission it was noted in practically all of our cases the spinal sugar was extremely low, averaging 5 milligrams per 100 c.c. of spinal fluid. In the patients who recovered there was usually a prompt and sharp increase in the percentage of glucose in spinal fluid, on the average in this series of cases rising to 50 mg. at the time the sixth sugar estimation was made and remaining at or about these figures until the patients were discharged cured. In the fatal instances the sugar content of the spinal fluid remained about 20 mg. per 100 c.c. and only occasionally going above these figures. A drop in spinal sugar gave us a 24-hour notice of the development of relapse or recrudescence before any other signs were present. In several instances it was noted that there was pronounced terminal hyperglycorrhachia, suggesting an irritative lesion on the floor of the fourth ventricle.

SCARLET FEVER

I have been very definitely impressed with the value of the use of anti-serum in the treatment of scarlet fever. The results I have observed have been truly remarkable. In a considerable series of cases I have observed only one who did not respond promptly and satisfactorily to the administration of the therapeutic serum. The cases have been remarkably free from complications and the causative streptococci promptly disappeared from the throat cultures of these sick children. Again I would caution, however, in the making of dogmatic statements concerning the value of the serum when only several hundred patients have been observed. Scarlet fever is a disease which at the present time seems to be remarkably mild and it is quite possible that in one of the virulent waves of the disease which epidemiologists point out take place in the cycle of the infectious diseases, the serum may be found to be inadequate for the treatment of these patients who are suffering from the severe forms of scarlatina. One disagreeable feature of the scarlatina anti-serum is the almost regular appearance of urticaria seven days after its intramuscular injection, a phenomenon which can be adequately controlled by adrenalin, but which has resulted in many physicians abandoning it.

ERYSIPELAS

There is considerable controversy concerning the value of the serum prepared for the treatment of erysipelas. From the literature and private conversation, it is possible to get readily quite divergent opinions concerning this preparation and its efficacy in the handling of this disease. It is my impression that one of the reasons that treatment of the disease has not been as satisfactory as its sister streptococcal infection, scarlatina, lies in the fact that the serum is not administered as promptly as in this latter disease nor is it given in adequate doses. In our relatively large series of erysipelas cases we are unable to judge accurately of the value of the serum because we have administered it regularly to each individual who came into the infectious ward suffering from this disease, without control cases, but my own impression is that when given in double or triple the doses recommended by the pharmaceutical houses who are making this preparation, the duration of the disease is materially diminished and the severity of the infection is likewise decreased.

DIPHTHERIA

The use of diphtheria antitoxin has be-

come more or less standardized. In 1929, 205 patients with diphtheria came into Charity Hospital and last year a somewhat smaller number—183. In the two years there have been two deaths from diphtheria aside from those children suffering with the laryngeal type of the disease. These patients are often admitted *in extremis* and derive practically no benefit from the serum. The nasal and pharyngeal diphtheria cases receive 10,000 units of antitoxin. The laryngeal cases receive double or even triple this amount, half of it being given intramuscularly and half of it intraperitoneally. The diphtheria toxin is combatted successfully even in those patients who have the laryngeal type of diphtheria. We believe they die from mechanical causes rather than from the diphtheria toxemia, but the larger doses of serum are given because, in the first place, the patient is extremely ill and, in the second place, because the larynx is a relatively avascular structure and in order for the antitoxin to get to the infecting organism it must be in higher concentration than in the case of the extremely vascular mucosa of the naso-pharynx. A word of caution in relation to the administration intravenously of diphtheria antitoxin or any biologic protein preparation: I believe it is justifiable only in such cases as meningitis and pneumonia in which the prognosis is bad to start with and in whom the infection is more or less of an overwhelming one.

LOBAR PNEUMONIA

One of our Tulane men on the staff of the Charity Hospital, Dr. Campagna, has studied most carefully the past winter, patients with lobar pneumonia, who were treated with Felton's concentrated antipneumococcal serum. The results have been excellent. In type I pneumonia there has been a great decrease in the death rate in contrast with former years; in type II pneumonia likewise there has been a material diminution in the death rate, and comparatively little evidence of a specific effect has been noted in type III and type IV infections.

TETANUS

In tetanus it is the usual experience in handling this otherwise lethal infection that large doses of the serum administered promptly and early will affect a cure. Temporizing measures will result in the death of the patient, but if prompt recognition is taken of the fact that tetanus toxin is destroyed by tetanus antitoxin when the patient is not too greatly poisoned, the patient will recover.

MISCELLANEOUS CONDITIONS

I have not seen any patients treated with serum effective in plague, in cholera, in botulism nor in dysentery. In several instances of anthrax the anti-serum apparently cured the patient. My experience is too limited to offer any impressions as to the value of serum in the treatment of systemic streptococcic infection.

CONVALESCENT SERUM

I have had the opportunity of supplying some of my medical friends at irregular intervals the blood serum of patients convalescing from measles. In dosage of 5-10 c.c. it seems to be capable of preventing the disease. I have never had the chance of seeing it given for curative purposes, merely for prophylaxis.

CONCLUSION

I wish to accentuate what I said about the use of serum in tetanus, as being applicable to the treatment of practically all of the diseases for which there are specific sera. Always the dosage of the serum should be large and must be given early in the course of the disease to be effective.

1. Clendening, Logan, Modern Methods of Treatment, St. Louis, 1929, p. 187.

2. Garrison, George H., Meningococcic Meningitis, Okla. State Medical Journal, 23:392, 1930.

3. Goldman, T., and Bower, A. G., Treatment of Meningococcic Meningitis by Cisterna Puncture, American Jour. Med. Sci., 181:414, 1931.

4. Musser, J. H., Treatment of Acute Infectious and Contagious Diseases, J. A. M. A., 99:1125, 1927.

5. Watkins, J. Harold, Meningococcic Meningitis: Prognostic Value of Daily Spinal Fluid Sugar Determinations during Serum Treatment, Trans. Alabama Med. Assn., 1930.

DISCUSSION: *Dr. Geo. H. Garrison,* Oklahoma City:

I think this is a most complete discussion of infectious diseases. I believe the injection of serum in meningitis more effective at eight-hour intervals than twelve-hour intervals and twelve-hour intervals more effective than twenty-four hour intervals. There is a reason aside from the effect from the serum on organs, that is the effect of the accumulation of spinal fluid in increased cranial pressure as usually results from the injection itself and second to the irritation introduced by the serum—increased irritation of the cells. I believe in drainage of the meningitis cases after the administration of the serum is stopped. Drainage after the spinal fluid is

free and the patient is clinically improved is usually a very effective procedure. I want to say the injection of serum intravenously in diphtheria is a rather hazardous procedure and I do not believe we are justified in giving more than one thousand units in diphtheria intravenously.

DISCUSSION: *Dr. J. J. Hoover,* Oklahoma City:

I just want to ask one question, "What is the best way to prevent the spread of cerebrospinal meningitis?"

Dr. J. H. Musser, New Orleans, La.: Closing Discussion:

In the question of the use of ephedrin I differ somewhat. We have never had as good results in the treatment of urticaria with ephedrin as with adrenalin. In regard to the cisterna puncture, I myself, find actually getting into the cisterna, a simple matter compared to going into the spine. You will be surprised to find this far more simple and easy than going into the vein.

Dr. Hoover asked the method of control of the spread of cerebrospinal meningitis.

Epidemic meningitis is periodic and epidemics occur in cycles from five to fifteen years apart. There is a world-wide epidemic of meningitis at the present time. There are thousands and thousands of deaths in Shanghai. The most effective method I know for the prevention of the spread of the disease is absolute quarantine of the person who has the disease, and because it is possible to transmit it by drops of the infection, practically no one should come in contact with the patient except the attendant. People should be kept out of the room as there is a tendency for the organisms to be transmitted to the nasopharynx. These attendants, under all circumstances, should wear masks of gauze when in close contact with the patient and wear seven or eight layers of gauze. The patient should not be liberated from quarantine until a negative smear from the nasopharynx is obtained.

FUSOSPIROCHAETAL INFECTION OF THE GASTROINTESTINAL TRACT

FRANCIS M. DUFFY, M.A., M.D.
The Polyclinic, 211 W. Maple St.
ENID

In a considerable review of the literature I have been unsuccessful in finding much work which notes a fusospirochaetosis associated with peptic ulcer, appendicitis or ulcerative colitis. Davis[1] states it is not uncommon to find fusiform bacilli and spirochaetes in the intestinal tract about the caecum and appendix, and in some instances may be associated with appendicitis. As for peptic ulcer and acute colitis I have not been able to find any reports in the literature I have examined.

When we speak of a fusospirochaetosis we refer to an infection with which the fusiform bacilli and the spirochaeta of Vincent are associated. These two organisms either seem to live in symbiosis or one is a pleomorphic stage of the other. It is very probable that the two organisms are only different stages of development of the one species. From pathogenic observation we know that the fusiform bacillus is the predominant organism in early and acute conditions, whereas the spirochaete is the prevailing organism in chronic conditions. Again Tunnicliff[2] in making cultures of fusiform bacilli would have results in which she would have practically pure cultures of spirochaetes.

The general opinion is that about 30 to 50% of normal mouths carry these two organisms[3]. Reckford and Baker[4] state that about 1 in 50 normal mouths have these organisms present, whereas 90% of diseased mouths harbor these organisms. However it is an established fact that these organisms are present in practically all ulcerative conditions of the mouth whether it be the gingiva, mucus membranes, or tonsils.

During my last year, 1929, while I was Associate Professor of Bacteriology and Pathology at Creighton University, School of Medicine, I made a bacteriological investigation of the gums and tonsils of seven patients who presented the symptoms and laboratory findings of peptic ulcer. All of these patients showed the presence of numerous fusiform bacilli and spirochaeta. In four of these cases a microscopic examination of the gastric contents was made. Small placques of yel-

lowish mucus were smeared, and stained with dilute carbol-fuchsin. All of these showed some fusiform bacilli and numerous spirochaeta of varying size and number of spirals. Some have only two or three large spirals or undulations, whereas others showed six or eight small spirals.

During this same time, in the pathological department I was making smears from definitely diseased appendices which were removed at operation. All together smears were made from fourteen specimens. Of this number ten showed fusiform bacilli and spirochaeta varying in number from one to ten in microscopic field.

If we study the pathology and symptomatology of Vincent's infection of the mouth and some of these pathological conditions of the gastrointestinal tract we will find a more or less parallel condition. In gingivitis there is a dissolution of tissue and ulceration of the gum margins. In a Vincent's infection of the tonsils again there is a dissolution and severe ulceration of these structures. If the infection involves the mucus membranes of the mouth the resulting condition is ulceration. If we now examine the pathology of gastric or duodenal ulcer we find a similar condition as in Vincent's infection of the mouth, a dissolution, destruction and ulceration of the mucosa. In cases of appendicitis which have advanced to the point of perforation we find that there is a dissolution and ulceration of the mucosa of this organ. Likewise in cases of ulcerative colitis we find a similar pathological progress present.

Of the symptoms which are present with this type of infection pain is the predominant one. It must have been the factor which led to labeling these conditions of the mouth as Vincent's angina. We know that this infection of the mouth is probably the most painful of the various diseases which may affect the mouth. If we observe the conditions of peptic ulcer or appendicitis we note that the predominant symptom is pain of more or less of a constant, aggravating nature. The pain in all of these pathological conditions is quite characteristic.

We note that a febrile condition of from 100 to 103 degrees may be characteristic of an acute, sudden infection of this nature. In an acute Vincent's angina frequently a temperature coexists. In an acute ulcer attack you may have a temperature. In acute appendicitis a temperature is characteristic. In the chronic infections with these organisms you rarely have a temperature present. In ulcerative gingivitis which is nearly always chronic a temperature rarely exists. In chronic peptic ulcer a temperature is rarely ever noted. In chronic conditions of the appendix a temperature is not common except with acute exacerbations.

In acute infections with Vincent's angina there is as a rule a moderate leukocytosis. In acute peptic ulcers there is as a rule a mild leukocytosis. And we know that one of the diagnostic features of acute appendicitis is a moderate leukocytosis.

A condition that is common in all of these pathological conditions is the regularity of capacity to show improvement and have recurrent exacerbations. In the majority of cases these conditions continue until a spontaneous cure results or until relieved medically or surgically.

The frequent recurrence of a second ulcer after a gastro-enterostomy is probably due to a reinfection at the sight of surgical interference from the old ulcer. We are sometimes prone to believe that trauma offers an avenue of entrance for these spirochaetal infections.

A feature which we commonly note in a Vincent's angina, either acute or chronic, is a foul, fetid odor from the mouth. Not infrequently you will note this same fetid odor from the breath of a patient suffering from peptic ulcer. A gangrenous appendix on removal frequently eminates a fetid odor.

This diseased condition of spirochaetal infection is probably contagious. The manner of contagion is by either direct or indirect contact. It is probably spread in the same way that the acute infectious diseases are. There seems to be seasonal epidemics of it. From clinical observation it seems to be more wide spread and virulent during the spring and fall months, subsiding during the summer and winter months. This infection seems to gain its foot hold in certain persons who have a tendency to neglect their oral hygiene.

There are two avenues by which these organisms may reach the intestinal tract. One is hematogenous and the other is by ingestion. As far as the hematogenous avenue is concerned this would have

to be proven as yet. The conveyance of the infection from the mouth to the gastrointestinal tract by ingestion, seems the more plausible at this time. Apparently these organisms may be carried down with the food and lodge in those suitable and selected areas where the described lesions are produced. As far as the pathogenic powers of these organisms are concerned we do not know whether they are exotoxic or endotoxic in nature. Their presence at the site of lesions would make you suspicious that they are endotoxic in nature.

Since my coming to Enid, Oklahoma, fifteen months ago, I have examined and treated six cases of peptic ulcer and four cases of appendicitis. Of these six cases of peptic ulcer, three had been examined and diagnosed by other physicians as such, besides my own impressions. Two of the cases I know positively to have been suffering with ulcers because both were submitted to surgery. One was operated for perforation and the other was operated for a resection of the ulcer. Both of these after operation developed their characteristic symptomatology of peptic ulcer. All of these cases gave a definite history of bleeding gums and pyorrhea from two to ten years duration. Microscopic examination of their gums showed the presence of numerous spirochaeta and fusiform bacilli. A microscopic examination of the gastric content of four of these demonstrated fusiform bacilli, and spirochaeta. Two of these cases which had been having their ulcer symptomatology for five to eight years showed on microscopic examination only spirochaeta and no bacilli. There was no microscopic examination made on the two patients which had been surgicalized because we felt it was not necessary as smears from the teeth of both of them showed a Vincent's infection present. Furthermore there was positive evidence of peptic ulcer. In all of these cases the Wassermann blood test was negative.

The first case which I treated for peptic ulcer on the basis of finding microscopic evidence of fusospirochaetal infection in his mouth and also in his gastric contents, was one of ten years duration. During this time he would have recurrences of his ulcer symptoms in the fall and spring. In the last two years of this gastric trouble he states he had stomach hemorrhages and passed black tarry stools for several days, after which time he suffered from weakness and gastric distress for several weeks. This would gradually improve. However he was never entirely free from his trouble. This man came to me fourteen months ago for treatment of his trouble. After demonstrating a fusospirochaetal pyorrhea of his mouth and finding spirochaeta in his stomach contents, I proceeded to treat him on the basis of a spirochaetal infection. He was given two intravenous injections of neosalvarsan at an interval of seven days. The first dose was .45 grams and the second dose was .6 grams, using Abbotts' products. About one week after his last injection his gastric symptoms began to subside. Six weeks later he was not having any gastric disturbances and eating regularly. He remained at his work and had not missed a day since April, 1930. He states that it is the first relief he has had in ten years.

The second case I examined and treated was an Italian lady who had suffered with gastric pain which occurred about one hour after eating and remained to the next meal or until she took soda which relieved it. She says she had vomited some blood twice. Examination of her mouth showed a severe pyorrhea in the pus of which were numerous spirochaeta and fusiform bacilli. On an Ewald's meal the gastric contents showed 75 c.c. returned from an intake of 300 c.c. in one-half hour. The acidity was Hcl 32 and total acidity 58 degrees. The test for blood was very positive. Microscopic examination showed very numerous spirochaeta of the large undulating morphology. This trouble she had for over three years. She was given two doses of neosalvarsan .45 grams and .6 grams at an interval of seven days. On the third week after the second injection she stated that her stomach had felt better than it had for the past three years. It has been twelve months since I treated her and during this time she has enjoyed freedom from her gastric disturbances.

The third patient whom I treated was one with a clinical history and laboratory findings similar to above except that the time of gastric trouble was two years, and both spirochaeta and fusiform bacilli were found in the gastric contents. This patient received a dose of .45 grams and two doses of .6 grams of neosalvarsan at intervals of one week. His symptoms gradually subsided in the following six weeks and up to the present time, which is nine

months, has been free from all his gastric symptoms and enjoying good health.

The fourth patient to come under my observation and treatment was a young taxi cab driver who presented the characteristic symptoms of pain and alkaline and food relief for a period of about one and one-half years. Fluoroscopic examination of the stomach with barium meal showed the spastic contractions of gastric irritation. Gastric analysis showed Hcl 41 degrees and total acidity 63 degrees and trace of blood. There was much mucus and flakes of muco-purulent material. Microscopic examination showed numerous fusiform bacilli and a number of spirochaeta. Diagnosis of peptic ulcer was made. He was given four doses of neoarsphenamine of .45 grams at intervals of four days. After the second dose his burning between meals had considerably disappeared. After his third treatment he quit using his alkali powders because they were nauseating him, and he stated that he felt very good with only occasionally lightning flashes of pain in his stomach. Three weeks after the fourth dose he stated he was feeling excellent and had gained seven pounds in weight. It has been three months ago since he was treated and he continues at his work every day feeling better than he ever did.

The fifth case I treated was one who was operated for a perforated ulcer. At operation his ulcer was simply sutured over and closed. He had an uneventful recovery for six weeks. About four weeks after leaving the hospital he had a return of his ulcer symptoms in violent form. Knowing that his ulcer was active I proceeded to treat him. His veins were so small and collapsible that I resorted to sulpharsphenamine intramuscularly. He was given four doses of .5 grams at intervals of four days. His symptoms suddenly ceased after the second injection. He started taking various foods without any disturbance. After the fourth treatment he had gained nine pounds in weight and said he felt the best he ever has. Three days after his last treatment he took up his work as a salesman. It has been over three months since he was treated and he continues to do well.

The last case is one which was operated at Mayo's in 1922. Their impression at that time was ulcer of the stomach. For fourteen weeks he had been bed-fast from pain, vomiting, and weakness of the characteristic ulcer type. Due to the collapsible nature of his veins the first dose was given intramuscularly. He was put on raw meats and egg nogs to build him up. After two days his vomiting ceased and he said he surely relished his food. His pains were lessening considerably when his second dose was given which was intravenously. His last three doses were given intravenously. His gastric pain has been gradually subsiding and occurring more spasmodically at irregular intervals. He seems to have more trouble with accumulation of gas on his stomach. Physically he has shown improvement. He is stronger and has gained eleven pounds in weight and his anemia has cleared up. His blood count was 3,100,000 when I first treated him. In about six weeks time it was back to 4,800,000 with hemaglobin of 85%. Because of other possible existing conditions I do not know what the final results on this man will be.

Four cases of chronic recurring appendicitis were studied and treated on the basis of a fusospirochaetal infection. In all four of these cases evidence of Vincent's infection of the mouth was determined. Three of the cases presented evident ulcerative gingivitis, bleeding of gums for a period of one to two years duration. One case did not show much in the way of a mouth infection except that gums would occasionally bleed on washing them. However she was the sweetheart of one of the above three who had a severe case of ulcerative gingivitis. They became acquainted and kept company for a period of about eight months before I saw them. She had never had any pains in her abdomen until the eight months time she was acquainted with her boy friend. But during these eight months she had five attacks of appendicitis and always a soreness in her side.

The first one of these cases was treated about one year ago. At that time he was in bed three weeks with a severe attack of appendicitis. He was in severe pain the first time I saw him. He was given four doses of .45 grams of neoarsphenamine at weekly intervals. Three days after the first treatment he was able to be up and around the house. On the fourth day he went out and moved a garage. After his fourth treatment his pain and soreness was all gone and he was back to labor, the first time in one year. Since his treatment he has not had any pains or abdo-

minal trouble. He has been working at his carpenter trade fourteen months now.

The next two cases were the above mentioned man and his sweetheart to whom he apparently gave some of his Vincent's infection. They were both treated with four doses of .45 grams each. It has been eight months since they were treated. His mouth infection cleared up and his attacks of appendicitis ceased and all soreness has left. He continues to feel excellent. The girl has not had an attack of appendicitis since she was treated eight months ago.

The fourth case was a book store salesman. He has been having attacks of appendicitis for about two years, about six times a year. For the last six months his right upper pelvic region has been tender and at times caused pains. I saw him about three months ago and he had the signs of appendicitis with a white cell count of 11,000. He was treated with four doses of neoarsphenamine of .45 grams at weekly intervals. His attack let up in twenty-four hours. After the fourth dose his side felt fine. He said it was the first relief from soreness he had in his side for about two years. His constipation also cleared up and his bowls evacuate now twice a day. This man was treated about three months ago. Of course time enough has not elapsed yet to reach a conclusion with him but his improvement justifies reporting his case.

All of these patients had low grade temperature of 99 to 100 degrees. They had a leukocytosis ranging from 8600 to 11,000. All presented the characteristic tenderness over the mid area between the umbilicus and the anterior superior spine. Constipation was the rule in all of these cases. In no case have I attempted treatment in acute fulminating appendicitis. These cases are more probably due to some of the pyogenic infections because of their rapid course. However in the very incipiency treatment might be begun and if no relief in twenty-four hours then there should be surgical intervention. I would be guided largely by the presence or absence of a fusospirochaetal infection existing in the mouth.

Two cases of acute colitis of six to eight weeks duration were examined and treated. Both showed on microscopic examination of the mouth a fusospirochaetal infection very active. Mucus from the stool of both also showed numerous spirilla. Both were treated by giving heavy doses of calomel in divided doses and recovered from their diarrhea rapidly.

DISCUSSION

The etiology of gastrointestinal infections, especially peptic ulcer and appendicitis, have been very irregular and uncertain. Consequently the investigations I have reviewed seem to offer an opening into the cause of these diseases. Therapeutically similar results to mine in the treatment of peptic ulcer have been obtained by other men, but on the basis of uncertain etiology. In a review of the literature I find some men[4] on the basis of therapeutic treatment of peptic ulcer with the salvarsan group present the view that many ulcers of the stomach are syphilitic even in the absence of a positive Wassermann. Parody[8] states definitely that all ulcers of the stomach are syphilitic on the basis of therapeutic results which he has obtained with the salvarsan group. We can see where they would be led to believe this on a therapectic basis, because the same treatment is used as an effective measure in both syphilis and fusospirochaetal infections.

As for the treatment of appendicitis there is no literature to be found wherein it was treated other than surgically. However I think that it is a quite common belief in the medical profession that there seems to be a relationship between peptic ulcer and appendicitis because they both so frequently exist together. Both conditions have also associated within the greater percentage of cases, constipation.

In conclusion I wish to state that I am offering this investigation and the therapetic results which have been so far accomplished for further study. I feel that the observations which I have made as to the etiology of peptic ulcer and appendicitis have a foundation on which to work. The therapectic results which have been obtained so far would bear out those etiological observations.

BIBLIOGRAPHY

1. Davis, David J., Illinois Medical Journal, March, 1925.
2. Tunnicliff, Journal Infectious Diseases, 1906 3:148.
3. Reckford and Baker, Journal A. M. A., 1920, 75:1620.
4. Rosenau, Preventive Medicine and Hygiene, Edition 5, pp 206.
5. Einhorn, M., Medical Record, 1915, LXXXVII 421.
6. Downes, W. A., and Lewald, J. A .M. A., 1915, LXIV 1824.
7 Lester, J. D., Nashville Academy of Medicine May 22, 1923.
8. Parody, R. E., Prinsa Medicine, Buenos Aires, Vol. 91, 1918.

COMPLICATIONS OF TREATMENT FOR SYPHILIS

JAMES STEVENSON, M.D.
TULSA

Of the drugs which are used in treating syphilis—arsenic, mercury, bismuth, and the iodides—all four give rise, in certain individuals, to undesirable, and sometimes serious reactions. The acneiform eruption produced by the iodides, the stomatitis of mercurialism and the nephrosis due to mercury are well known. This article will limit itself largely to a brief consideration of some of the complications occurring during treatment with the arsenicals.

A large number of trivalent and pentavalent organic arsenic compounds have been described, but only those which have a sufficiently low toxicity and a comparatively high spirillicidal activity are of practical use in treating syphilis; these latter being arsphenamine, neo-arsphenamine, sulpharsphenamine, silver arsphenamine and tryparsamid. It is interesting to note that a higher amount of arsenic can be injected into the body with these drugs than can be given with most other compounds of arsenic (e. g. sodium cacodylate). This is probably due to the fact that the organic arsenic preparations are not poisonous and that oxidation in the body to a crystallin form of arsenic (arsenoxid) is necessary before the arsenic can produce its physiological effects. This oxidation process requires several hours time[1], and probably the active arsenic is excreted as it is formed rapidly enough to prevent toxic symptoms from appearing in the body. The toxic affects of the various arsenicals have many features in common since the arsenic content exerts a similar effect, the important features being: first, a capillary effect, characterized by dilatation, congestion with serous exudation, and minute hemorrhages; second, parenchymatous degeneration and necrosis. But the varying chemistry of the different compounds produces certain special effects, because of selective affinities for certain tissues, because of impurities which may be present, or because of errors in technique in their preparation or administration. Solutions of arsphenamine, for instance, are acid, contain methyl alcohol, and inorganic impurities as sulphites, sulphates and sodium chloride, and injection into the blood without proper neutralization results in agglutination, precipitation and hemolysis, and the recipient dies from the results of widespread embolism. Dermatitis occurs more often with sulpharsphenamine than when the other arsenicals are used[1]. Arsphenamine is more toxic for the liver than neo-arsphenamine, and the pentavalent arsenicals, like tryparsamid have a special affinity for nerve tissue.

Ordinary care will prevent many reactions. The following rules should be observed:

1. A careful physical examination should be made. Foci of infection should be removed early in the course of treatment. In early syphilis in young robust adults, full doses of the arsenicals may be given but in treating chronic syphilis with impaired kidneys, liver, cardiovascular or nervous system, smaller doses should be used, or the patient prepared by a course of mercury before using the arsenicals.

2. Do not use arsenicals in cracked ampoules, or drugs of changed color. Water should be freshly distilled or from hermetically sealed ampoules.

3. Dissolve the drug with little shaking, to avoid oxidation. Arsphenamine solution should stand ten to twenty minutes before injection, but neo-arsphenamine should be used at once.

4. Hot water may be used in dissolving arsphenamine, but cold water should be used in dissolving neo-arsphenamine and sulpharsphenamine.

5. The drug should be injected slowly, using eight to ten minutes for arsphenamine, and two to three minutes for neo-arsphenamine.

6. In the gravity administration of arsphenamine or silver arsphenamine, new rubber tubing should be avoided, or prepared by running sodium hydroxide solution through it, followed by distilled water.

7. Do not use arsphenamine in a febrile patient, or in one with a respiratory infection.

8. Aid elimination by diet, fluids, and a purgative if necessary. Administer the arsenicals on a fasting stomach.

9. Ask the patient if he itches after each dose of the arsenical. Itching is usually a forerunner of dermatitis.

Kolmer[2] makes the following clinical classification of toxic reactions following

the intravenous use of arsphenamine and its substitutes.

1. Immediate reactions:
   a. The acute physico-hemoclastic reaction.
   b. The acute vaso-paretic reaction or "nitritoid crisis."

2. Early reaction (following within twenty-four hours after injection).
   a. The gastro-intestinal reaction.
   b. The protein and colloidal shock reaction.
   c. The accidents of infection, such as phlebitis, thrombosis, perivascular infiltrations, etc.

3. Late reactions (occurring one day to several weeks after injection).
   a. Hemorrhagic encephalitis.
   b. Dermatitis.
   c. Neuritis, neuro-recurrences, and neural Herxheimer reactions.
   d. Jaundice.

The Jarisch-Herxheimer reaction may occur when using mercury or bismuth, but is much sharper when the arsenicals are used. While a mild elevation of temperature may occur, the important phase is the exaggeration of the syphilitic lesions with increased swelling, redness and discharge. In neuro-syphilis and cardio-vascular syphilis the phenomenon may manifest itself by an increase in severity of symptoms. In easily penetrable tissue it begins eight to twelve hours after intravenous injection, and rapidly subsides; in tissues of low vascularity, or those relatively impenetrable to arsenic, the reaction may be delayed for a week or two. The Herxheimer reaction may be of small or great importance; the exaggeration of a chancre might be of small moment, but a reaction occurring in a syphilitic with an aortic aneurysm or a leutic hepatitis might prove fatal. In serious late syphilis, or in early syphilis involving vital structures, this reaction may be avoided by first preparing the patient with mercury.

The nitritoid crisis, so named by Milian from the resemblance of its symptoms to those produced by amyl nitrate, generally occurs while the patient is being given the intravenous injection or shortly thereafter. The patient becomes uneasy and the face is flushed. If the reaction is more marked, the skin is covered with blotches, the eyelids and face are swollen, and respiration is wheezing. Unconsciousness, with a barely perceptible pulse may ensue. Startling as the symptoms are, death has rarely occurred. The nitritoid crisis generally occurs when the drug is being injected too rapidly, and is due to the action of arsenic on the capillaries, red blood cell agglutination giving rise to capillary thrombosis in varying degrees. The active treatment of the condition consists of at once discontinuing the injection of arsphenamine, and administering ten to fifteen minims of adrenalin subcutaneously. Future reactions may be prevented by subcutaneous injection of 1-50 grain of atropine sulphate twenty minutes before giving the arsenical', or by using the Bezredka method of dividing the dose of arsphenamine, giving one-tenth of the total amount first, followed in one hour by the remainder.

Gastro-intestinal symptoms commonly follow the intravenous use of arsphenamine, nausea and vomiting most often, diarrhea more infrequently. The routine use of a mild laxative the night before treatment, and the warning to the patient not to eat for several hours before and after intravenous therapy, is all that is needed to prevent most reactions of this type. As many of these gastro-intestinal reactions are associated with, or follow the nitritoid crisis, the preventative administration of atropine sulphate may be used.

Hemorrhagic encephalitis is apparently more common in Europe than in this country. It occurs most often in patients who have had prolonged treatment with mercury, followed by several doses of arsphenamine. A tremendous edema of the brain, resembling that of acute alcoholism, occurs, and the patient generally dies with uremic symptoms. A few cases have recovered following the use of adrenalin and the intravenous injection of hypertonic solutions.

Jaundice is a rare but serious complication of treatment with the arsenicals. The liver being a favorite location of the spirochaeta pallida, jaundice may be due to an "hepatic Herxheimer" reaction. On the other hand, the liver is a great storehouse for arsenic, and the drug itself may produce necrosis of the liver cells. Again, the

appearance of icterus in a syphilitc patient under arsphenamine treatment may be due to gastro-duodenitis, to cholelithiasis, or some other coincident disease. The occurrence of this symptom in such a patient, therefore often presents a difficult problem in a differential diagnosis. In a given case where any uncertainty exists, the arsenicals should be stopped temporarily and sodium thiosulphate given for a week and the effect watched. Later treatment may be commenced, using mercury; still later neo-arsphenamine in small doses may be used in place of the more hepatoxic arsphenamine.

The cutaneous reactions to the arsenicals are numerous, varying from simple herpes and utricaria, to the dreaded exfoliative dermatitis. Midway in severity are those reactions resembling erythema multiforme, one of which, the scarlatiniform, closely approaches exfoliative dermatitis. Exfoliative dermatitis is the most cutaneous complication in the treatment of syphilis, sometimes resulting in death. Most cases have a prodromal warning of trouble ahead, usually in the form of severe itching on the day following the injection of the drug, and the appearance of areas of dermatitis on the flexures. If the arsphenamine is continued and early dry, but later oozing dermatitis begins, rapidly involving the entire body surface, and accompanied by edema of the skin, especially upon the legs and face. In most cases fever is present, and the patient complains of constant chilliness. In this stage the blood picture, as pointed out by Moore and Keidel[5] is typical, showing a leucopenia, but a marked eosinophilia. The severe cases then follow a long course, sometimes of several months duration. The edema disappears and the skin becomes dry and scaly. The patient loses weight and secondary infections are common. Finally if the patient is to recover visible sweating returns, islands of paler skin are noted, and chilliness becomes less marked. The cause of this serious complication is unknown—it is probably highly complex, as indicated in the interesting articles on this subject by Moore and Keidel, and Stokes and Cathcart[6]. The treatment of exfoliative dermatitis can not be gone into in detail here. Suffice it to say that it has been much simplified by the early use of sodium thiosulphate, first used in this country by McBride and Dennie[7]. At the outset, its use is invaluable, but it is probably of little service after the first week or ten days.

In conclusion, it may be stated that many of the complications of treatment for syphilis are avoidable with more care on the part of those treating the disease; that the treatment should not consist of a rigid routine of doses of this or that preparation.

REFERENCES

1. Underhill, F. and Davis, S.: Elimination of Arsphenamine and Neo-Arsphenamine in the Urine. Arch. Dermat. and Syph. 5:40, 1922.

2. Belding, David L.: Sulpharsphenamine in the Treatment of Syphilis. Arch. Dermat. and Syph. 9: 470-478, April, 1924.

3. Kolmer, John A.: Chemotherapy with Special Reference to Treatment of Syphilis. 565.

4. Stokes, J. H.: Atropin and Induced Anti-anaphylaxis as a Protection against Acute Arsphenamine Reaction. Journ. A. M. A. 72: 241-243, January 25, 1919.

5. Moore, J. E. and Keidel, E.: Dermatitis and Allied Reactions Following the Arsenical Treatment of Syphilis. Arch. Int. Med. 27:716-747, June 1921.

6. Stokes, John H. and Cathcart, Edward P.: Contributing Factors in Postarsphenamine Dermatitis. Arch. Dermat. and Syph. 7:14-49, January, 1923.

7. McBride, W. L. and Dennie, C. C.: Treatment of Arsphenamine Dermatitis and Certain Other Metallic Poisonings. Arch. Dermat. and Syph. 7: 63-76, January, 1923.

8. Stokes, John H.: Modern Clinical Syphilology.

TEN YEARS OF PREVENTIVE INFANT FEEDING

Ten years ago this month the S.M.A. Corporation, then The Laboratory Products Company, announced an epoch making development, S.M.A., to the medical profession. It represented a new idea, namely that cow's milk could be modified to resemble breast milk so closely that about 95% of the infants deprived of breast milk would do well on it, and that the anti-rachitic factor, cod liver oil, could be included so that no other protection would be necessary. S.M.A. is still the only anti-rachitic infant food available.

The idea for this adaption had been conceived back in 1910, now twenty-one years ago. Clinical tests began in 1913. A preliminary report made to The American Pediatric Society in 1915, and a more extensive and elaborate one in 1918, before the Section on Diseases of Children of the American Medical Association proved that S.M.A. was a marked advance in infant feeding.

The results obtained from feeding S.M.A. were so remarkable that practicing physicians asked for it. Eventually such a demand developed that S.M.A. was offered to the medical profession generally. It is estimated that to date more than three hundred million feedings have been prescribed by physicians, all over the United States and in several foreign countries.

The first infants to be fed S.M.A. are now school children and these together with hundreds of thousands of others are living examples of the soundness of the nutritional principles of S.M.A. in its first decade of service.

CYSTS OF THE URACHUS—CASE REPORTS*

LEROY LONG, M.D.
OKLAHOMA CITY

FIGURE I.

Case 1. Note irregularity of upper bladder, with schemetic outline of cyst above it.

The normal urachus is a solid, firm, cord-like structure that lies between muscles and peritoneum and extends from the apex of the bladder to the umbilicus. It is the remains of a tubular embryonal extension in the allantoic stalk that normally is obliterated in early fetal life.

There are instances in which obliteration either does not occur, or is incomplete. Apparently, failure of obliteration is rare.

Colston, writing in Nelson's Loose Leaf Surgery, states that the diagnosis was made only three times in 15,000 admissions to Brady Urological Institute. However, it is probable that the incidence is much greater, because, as will be shown, a patent urachus does not always produce symptoms through which attention would be called to it.

*Read before Surgical Section, Annual Meeting Oklahoma State Medical Association, Oklahoma City, May 11, 12, 13, 1931.

There are four types of patent urachus:

1. The urachus is patent throughout. This is known as the complete type.

2. There is failure of obliteration at the umbilical end. This is the blind external type.

3. There is patency at the vesical end. This is the blind internal type.

4. The two ends are closed, but some part of the urachus between the ends is patent. This is the blind type.

In the blind external type there is moisture at the umbilicus. In the complete type there is considerable leakage at the umbilicus because there is a direct communication with the bladder.

The blind type and the blind internal type may exist indefinitely without producing symptoms. These types do not produce symptoms unless there is dilatation by fluid, or infection, or both.

Occasionally the cells of the lining membrane of the patent urachus secretes watery material. It is not known why the cells of the lining membrane suddenly take

FIGURE II.

Case 1. Note distortion of bladder with schmetic outline of cyst above. Extensive flattening of the bladder probably due largely to pressure from abdominal viscera crowded backward and downward by cyst.

on this activity, but I believe there are grounds for believing that trauma or associated general infectious processes might be regarded as activating conditions.

If secreted material accumulates in a typically blind urachus, or in either of the other types that has become blind by obstruction, there is dilatation of the urachus, and a retention cyst is formed. The size and extent of the cyst depends upon the extent of patency and the amount of fluid in it. When it is patent throughout most of its length with only the two ends closed, there may be developed a large cyst several inches wide and extending practically from bladder to umbilicus.

I am particularly interested in the blind patent urachus in which a so-called cyst has been formed, because such a condition presents problems of tremendous importance to the general surgeon in connection with differential diagnosis and treatment.

The urachus is approximately in the mid-line of the lower abdomen. A cyst of the urachus, therefore, is a mid-line cyst. It is tense. Usually, by palpation, the limits can be distinctly identified, even though the contents may have become infected. Let me hasten to say, however, that sometimes, in the presence of an infected cyst, there may be so much tension in the pericystic areas of the abdomen that it is difficult to accurately determine the limits of the cyst. In the developmental period this difficulty is not present.

With a large cyst of the urachus there is abdominal distress and gastrointestinal disturbance. If infection has taken place, there is pain and tenderness, associated with fever and other signs of sepsis.

Apparently, there are cases in which the urachus communicates with the bladder through a very small opening that is intermittently occluded, especially in the presence of infection. In such a case there may be intermittent escape of material from the cyst into the bladder with concomitant changes in the size of the cyst. The phenomena in one of our cases seem to support this hypothesis.

Case 1. On January 28th, 1931, through the courtesy of Dr. Tom Lowry, I examined Walter T., a white boy five years of age. I was asked to see him because of a recently developed globular mass occupying the mid-portion of the lower abdomen from symphysis to near the umbilicus.

There was a history of respiratory tract infection beginning January 18th, 1931—two weeks before I saw him. In connection with it there was pain and tenderness of the abdomen, and there was fever, accelerated respiration and other evidences of acute respiratory tract infection.

After five or six days there was pronounced improvement, and it was thought the patient was convalescing; but two days later there was a chill, followed by a temperature of 104. There were severe abdominal pain and tenderness, rigidity and distention. The W. B. C. at that time was reported within normal limits.

Two days later there were less general distention and rigidity, but in palpating the abdomen Dr. Lowry discovered the mass. In order to determine whether it was a distended bladder, a catheter was introduced, recovering only a few ounces of urine, and making no change in the size of the mass. When the catheter was withdrawn it was observed that a small amount of material having the gross appearance of pus, was clinging about the end. The laboratory reported a few pus cells in the urine. The material on the end of the catheter was not examined in the laboratory. At this time there were remittent fever and a W. B. C. of 17,000, with a neutrophile percentage of 83.

The most striking physical finding, when I saw the child, was a perfectly symmetrical, tender, almost immovable, mid-line tumor measuring some four inches transversely and extending from symphysis to near the umbilicus. The surrounding abdomen was not tense. There was audible peristalsis.

Deferring an opinion, I had a discussion with Dr. Wendell Long, who suggested that the tumor might be an infected urachal cyst. After a second examination I thought this the most reasonable explanation.

The child was sent to the hospital where a roentgenograph of the bladder was made after filling it with an opaque solution. It appeared to be of normal size, but a little flattened and broadened, as if there was pressure above it.

The next day the mass was smaller, the temperature not much above normal, and general improvement. The only reasonable explanation of the reduction in the size of the mass was that the cyst was emptying itself into the bladder. The

parents were permitted to take the child home, but almost at once there was increasing enlargement of the mass, accompanied by fever and increased tenderness of the abdomen. Three days later it was definitely decided to operate, and the child was sent back to the hospital.

Operation was done on February 5th, 1931, through a four and one-half inch incision just to the left of the mid-line The recti muscles were separated, when immediately two or three ounces of whitish, odorless pus escaped. Drainage tubes were put in and the wound closed. The pus was between muscles and peritoneum. A culture grew staphylococci.

Drainage ceased in about three weeks. I believe that, through granulation following incision and drainage, the cyst has been obliterated.

This child had always been well. There had not been symptoms indicating urinary tract disturbance.

It will be noted that the mass in lower mid-abdomen appeared after an acute respiratory tract infection. Is it not a reasonable conclusion that the cells of the lining membrane of the patent urachus were activated by the toxemia?

There is another interesting speculation in connection with the sudden and decided change in the size of the mass. It might be explained on the hypothesis that there had been a blind internal patency, and that the opening into the bladder became occluded, this occlusion temporarily disappearing later under pressure; or that there had been a blind patency with frail and imperfect occlusion at the bladder end, this occlusion being overcome by pressure.

Cysts of the urachus are seen most often in childhood, and the majority are in male patients. In this connection it may be interesting to report a case in a woman.

Case 2. Mrs. O. H. H., multipara. 27 years of age, entered University Hospital March 14th, 1925, because of abdominal pain with great distention, after an illness of a month, the illness beginning four days after a normal confinement, and being characterized, in addition to pain and distention, by fever, nausea, vomiting, loss of weight and strength. For a week there had been a right sided parotitis.

On admission, after a long journey, the temperature was 102.8, pulse 140. The appearance was that of an extremely sick woman. The abdomen was tense, distended and tender. The percussion note over a considerable area in lower mid-abdomen was flat. There was occasional audible peristalsis. Notwithstanding the unexplained flat area and the audible peristalsis, there was a tentative diagnosis of peritonitis, origin unknown.

Incision and drainage of the parotitis reduced the toxemia, and there was some improvement, but there was no change in the abdominal part of the picture until six days after entrance, when a small, tender fluctuating mass just to one side of the center of the umbilicus was observed. It was arranged to incise it the next morning, but during the night it ruptured spontaneously, when, according to the intern on the service, "about a gallon of cream colored, rather thick, odorless pus escaped." The amount guessed by the intern was probably too great, but there was a large amount. Cultures grew a Gram-negative bacillus and a Gram-positive diplococcus.

About three weeks after the rupture, the drainage being inadequate and intermittent, the tract was located by passing a probe, after which it was dilated and a 14 F. soft catheter introduced. This was followed by the discharge of 400 c.c. of greenish yellow pus. After the discharge of the pus, the cavity was irrigated with normal saline solution, and this was followed by the instillation of 7 c.c. of 2% mercurochrome. The irrigation and instillation were repeated daily.

After securing adequate drainage, there was rapid improvement but, as would be expected in connection with such a large cavity, drainage did not cease entirely for several weeks. She was discharged in good condition May 10th, 1925.

It would seem reasonable to conclude that this was a case of blind patency of the urachus, with a relatively thin covering at the umbilical end that finally yielded under the tremendous intracystic pressure in connection with the advancement of infection by continuity. It would, too, seem reasonable to conclude that activation of the lining cells might have been associated with the trauma of pregnancy and confinement; possibly with a toxemia following the pregnancy.

Sometimes an atypical cyst of the urachus may be associated with other neigh-

boring developmental defects, such as lack of fusion of some part of the urinary tract and defective development of the lower mid-abdomen, as illustrated by the following case:

Case 3. R. D. C., a white boy of six years, was admitted to Crippled Children's Hospital, February 27th, 1931, because of a globular mass between umbilicus and symphysis, at one side of which there was leakage of fluid; and because of a defect of the roof of the urethra, these things having existed from birth.

The mass below the umbilicus was about three inches in diameter. There was a large defect in the deeper structures of the abdominal wall. A part of the mass could be reduced through this defect. Just to one side of it there was a more tense mass about one and one-half inches in diameter that could not be reduced, and near its apex there was a tiny opening through the skin, from which there was an intermittent escape of small droplets of clear fluid.

The injection of colored water into the bladder did not change the color of the escaping fluid. An X-ray, with the bladder injected with opaque material, did not indicate a diverticuum. Lipiodol injected by way of the opening in the skin showed a picture apparently entirely distinct from the bladder.

Incidentally, the X-ray showed a wide separation of the pubic bones. Aside from the defects noted, the boy appeared to be perfectly well.

The diagnosis of the abdominal pathology was atypical cyst of the urachus and ventral hernia, and this was confirmed by surgical operation on April 1st, 1931.

At operation the hernial sac was opened, the redundant part of it excised and the peritoneum closed. In this way we were able to definitely isolate the dilated urachus, which was surrounded by condensed fat and fibrous tissue except where it was in contact with the peritoneum. This mass was in very close contact with the bladder, being separated from it by a thin layer of dense tissue, through which no opening could be demonstrated. The top of the bladder was attached to this tissue, and, through this attachment, was held abnormally high. In order to mobilize the bladder, a section of it was excised and removed with the mass, after which the bladder was sutured and the abdominal wall closed around a tissue drain. There was some leakage for two weeks, but the patient was discharged in good condition on April 30, 1931.

In this case the cyst was not very large, but the anatomy was greatly distorted, making it difficult to accurately separate the cyst from the structures in front of it. Again, there was wide separation of the recti muscles, the cyst protruding between them.

In the presence of normal superimposed anatomy, an effort should be made to enucleate an uninfected cyst without sacrificing the overlying muscles. In the presence of infection, I do not believe that enucleation of the cyst should be undertaken. In my judgment, it is far safer to drain. Besides, after incision and drainage of an infected cyst, it probably will be obliterated by granulation.

Finally, the diagnosis of cyst of the urachus involving its lower reaches should not be made until it has been demonstrated that the enlargement is not due to a distended bladder.

DISCUSSION: *Dr. Bransford Lewis*, St. Louis:

I am very much interested in Dr. Long's paper. I think that we see these cases occasionally where differential diagnosis comes into consideration and he has given that as well as it can be given. If this condition becomes infected it is likely to be followed by disaster.

Dr. Long, Sr.

I thank the gentleman for his kindness in discussing the paper.

MILIARY TUBERCULOSIS OF SPLEEN WITH THROMBOPENIC PURPURA HEMORRHAGICA

According to Ellis Kellert, Schenectady, N. Y. (Journal A. M. A., June 27, 1931), tuberculosis of the spleen is uncommon considering the total number of tuberculous individuals, and even more rare is its association with purpura hemorrhagica. He describes the case of a woman in whom these two conditions concurred and in whom there seemed to be a relation between the infectious process in the spleen and the severe purpura hemorrhagica.

WHY DRAIN THE PERITONIAL CAVITY*

ROSS GROSSHART, M.D.
TULSA

The peritonial cavity is a closed air-tight barrel from the diaphragm to the pelvis, lining the interior as well as covering the organs therein; which becomes infected from the hollow viscera or from punctured wounds carrying infection from without into the cavity.

The infection when introduced into the cavity causes symptoms that we all know as peritonitis, and named by the location of the offending organ.

These infections may be of many diffenent kinds. Most prevalent are the colonic, Welchi staphylococcic, gonococcic and streptococcic; however, not exempt from any of the pathogenic organisms.

When peritonitis is diagnosed, there is only one treatment either early or late, and time for interference is selected by the attending physician or surgeon and the route to approach same.

The patient is prepared, anesthetized, incision made to relieve the peritoneum of its offending organ and allow it to return to normal function. To drain pus cavity, whether it is confined to one local position or whether it is a general peritonitis is the same phenomenon. The peritoneum and omentum throws a wall around the drain in three or four hours or sooner, and your drainage does nothing but allow saphrophytic infection to enter and break down the cofferdam surrounding the drain and change the infection from the immediate offender to a saphrophytic and immediate infection, which gives you a tissue destroyer as well as a good culture medium for the original infection, and finally overwhelms the resistance of the peritoneum, which is the greatest resister to infection of any tissue in the body; and by introducing a foreign body capable of admitting air and infection which does not drain the cavity, puts the peritonial cavity in an abnormal condition, and advances infection already existing by lowering the tissue resistance by saphrophytic infection, giving the better culture medium for growth and absorption.

Let's analyze the habits of bacteria: Welchi anaerobic must have dead or devitalized tissue to produce toxemia, caused by saphrophytes which establishes gas infiltration, cuts off the blood supply and devitalizes and allows progress of infection.

Gonococci is aerobic and will not multiply in a closed cavity—hence pyosalpinx gonococcal after closing the tubes. Hydrosalpinx results.

Colonic is the same as gonococcal. Staphylococcal works best in the presence of oxygen, which is supplied by drain.

Streptococcic works best in the presence of oxygen, but the patient will die, drained or not drained. The best chance is not to drain. When you drain a pus cavity you put in drain to bottom of cavity and close the belly wall around drain.

The omentum and peritoneum begins at once to wall off the foreign body and accomplishes this, in three to twenty-four hours, and all the benefit you get is from actual contact with the wall formed, and does not drain any farther than the wall; but it does do harm by admitting oxygen to the cavity, also admitting saprophytic bacteria into cavity to carry on putrifaction, and gives a good culture medium for pathogenic bacteria to multiply, which will exhaust your patient's already lowered resistance and toxic condition, and may cause pressure on devitalized gut and fecal fistula. The results will be adhesions following healing by granulations, causing hospitalization from four to six weeks longer than if not drained.

MODE OF PROCEDURE

Diagnose carefully so you may decide on the best route to approach. Make incision large enough to work dexterously and expose field of infection if abscess is walled off, dam off with belly tape. Thoroughly open abscess and sponge pus out until dry. Break down adhesions, remove source of infection, ligate and remove all infected tissue, omentum and other appendages. Control all hemorrhages and oozing, have cavity dry and then pour in enough ether to fill the cavity. Remove tapes and close belly with ether left in belly which will be boiling, close peritoneum as quickly as possible by having it isolated before ether is put into cavity. Close belly wall same as if a clean case.

If general peritonitis with free pus in belly, drain through wound, dip out pus until it is dry; find cause of infection, re-

*Read before Annual Meeting Oklahoma State Medical Association, Oklahoma City, May, 1931.

move same as if walled off, dry cavity with tapes, and sponge into kidney cavity under liver, spleen and pelvis. Pour in ether, see that it covers all the spaces, close peritoneum as before mentioned.

POST OPERATIVE

Put patient to bed in Fowler's position —and I mean Fowler's position—not elevated head of bed or their neck bowed; but see that the whole spine is at least in a forty-five degree angle with the horizontal. Hold respiration between twelve to fourteen per minute with morphine, give glucose intravenously until it spills over through the kidneys. If dehydrated (which most patients are) give sodium chloride solution, quantity enough to fill up tissue and bring up the chlorides in the urine, this can be assisted by the Murphy drip. For gas give enema and pituitrin and insert rectal tube. Catheterize every eight hours if necessary, as morphine may paralyze the bladder. Keep stomach empty and lavage same if regurgitant emesis continues. At the end of seventy-two hours (post operative) if you can hear any vermicular movement in the intestines, give five grains of calomel, follow in eight hours with saline per orum.

You will get healing by first intention in ninety per cent of your cases, and a hospital discharge in two weeks; the other ten per cent may have fat infection which will heal readily. No bad adhesions and no hernias; hospital time cut one-half at least.

I have been following the above procedure for the last ten years, with a mortality of six per cent, including pneumonia, shock, emboli, suppression of urine, etc.

WHY USE ETHER IN CAVITY

Because it is the best non-irritating antiseptic, boils at body temperature, gas enters all recesses in the belly cavity stimulating circulation and lessens the amount of morphine, and I am of the opinion lowers the vitality of the infection until the phagocytical action has been established, or a bacterial phag has come to the rescue. All I can say is—*it works.*

217 New Wright Bldg.

DISCUSSION: *Dr. Bollinger,* Henryetta:

I cannot agree with Dr. Grosshart, I cannot pour the abdomen full of ether but we have a man in Tulsa who does and he gets away with it. He empties a whole can of ether into the abdomen, but I just cannot do it. I believe when we do that, we excite an irritation of the tissues, get more adhesions, lower the temperature of the abdomen and increase the shock, and further, I do not believe it is an antiseptic. I do not think ether will destroy a germ. I see this method practiced all the time, but I just cannot bring myself to using this method of treatment. I believe that the doctor gets results, but the results are not because we are putting ether in there, but the results come from after treatment which the patient receives.

Dr. W. C. Vernon, Okmulgee:

I was wondering if the doctor did not think perhaps that the results he receives are due to bacteriophagic action and not to the ether?

Dr. E. K. Collier, Tipton:

Do you put ether in the abdomen before you close the abdomen, if you are not going to drain?

Dr. Ross Grosshart: Closing Discussion:

Ether will dissolve the capsule of any bacteria, the same as it will dissolve the cremules in the skin and render them inert. Many of the germs which we have are encapsulated, and they reproduce themselves by division. Ether stops division. If we take a culture tube and put a most virulent culture of anthrax in a tube of ether and put it in an incubator of 37 degrees centigrade the anthrax will never grow again. I have experimented with this time and again. Ether is an antiseptic which stops the development of that individual bacteria and this is the benefit of ether. It absorbs and it forms a gas that goes into every recess of the peritoneal cavity. It is non-irritating. Ether put in the eye will only redden it, and it will not hurt the eye at all. The peritoneum is a most resisting tissue. Take away the debris, get rid of all the blood clots, all the excessive pus, get the cavity as dry as possible, and put your ether in, and it will stop the infection from regenerating itself. Did you ever see a Welchi bacteria on a wound that was not contused? You do not have it. You have to get dead tissue for the Welchi bacteria to grow upon and they are always present in the intestinal tract. If you do not give them something, to grow on, we will not be troubled with

the Welchi. The gonococci which causes peritonitis is anaerobic and it has to have air to multiply. We cannot culture a gonorrheal infection out of a knee joint. The streptococci is the only infection that I know of, that the ether and other conditions will not take care of. Every surgeon who sees the condition of the intestines and the secretion that is thrown out will recognize the streptococci. The peritoneal case that dies under this treatment is the one that is due to streptococcic infection. In the colonic, gonococcic, Welchi, etc., infections, fill the abdomen with ether and close, then forget all about it.

—o—

RECENT FACTS ON TRANSMISSION OF TUBERCULOSIS

J. Arthur Myers, Minneapolis (Journal A. M. A., Aug. 1, 1931), deprecates the fact that students of medicine and nursing are being left with the impression that it is a good thing to come in contact with patients suffering from tuberculosis and receive just the right dose to give them a positive tuberculin reaction. Under such conditions the dosage is entirely uncontrolled. The number of bacilli which the student's body receives from contact with tuberculous patients may vary from a few to huge numbers. Where careful observations have been made in this country, it has been shown that approximately 30 per cent of the probationers in schools of nursing react positively to the tuberculin test but, after they have taken tuberculosis services, from 80 to 100 per cent have been found to react positively. Since a positive reaction indicates an allergic state and since there is reason to believe that the destructive phase of tuberculosis is brought about by the allergic reaction, it would seem obvious that nothing but harm has been done by allowing students to take unmeasured doses of tubercle bacilli into their bodies and develop a state of allergy. But what immediate evidence is there that allergy is dangerous to the student? The best evidence is that from 5 to 12 per cent of student nurses have presented themselves with tuberculous disease that required treatment soon after allergy was manifested by a positive tuberculin reaction. Pleurisy with effusion is looked on as one of the early manifestations of tuberculosis. In itself, it is an allergic reaction. Many patients are desperately ill from it over a considerable period of time. Abundant clinical experience has taught that pleurisy with effusion is frequently followed by pulmonary tuberculosis of the destructive type. Therefore, in the light of such evidence, who will dare state that an allergic reaction, as manifested by the tuberculin test and brought about by exposure to human beings suffering from tuberculosis, is of benefit to a student? The author desires to leave the answer to the reader and to the students themselves as to whether exposure of students to tuberculous patients should be allowed to continue or whether it should be prevented by the adoption of an adequate contagious technic.

SOME SURGICAL BROWSING

F. L. WATSON, M.D.
MCALESTER

The first slide I will present today is that of an advanced case of granuloma inguinale. This was in 1919, when we did not know as much about this condition as we have since learned. Meridith Campbell, New York, had an article in the J. A. M. A., March 5, 1921, in which he claims antimony and potassium tartrate is a specific. Used early I have great confidence in this treatment. This patient had K. I. and salvarsan in enormous quantity; first in Hot Springs, then by me and again in Kansas City, but he grew worse each day until he died. I have seen three other cases, two of whom entirely recovered; the third case left for greener pastures, and I lost track of him.

Slide 2 is a spleen weighing 22 pounds which I removed from a young negro woman in 1917. This woman was brought in with diagnosis of cystic tumor of ovary, but the diagnosis was differentiated by bimanual vaginal examination. I exhibited this tumor in Chicago and Philadelphia at two large medical meetings. An internationally known surgeon remarked, "That fellow can do surgery; do you note that he says, 'Patient living four months after operation?'" She was still living four years after the operation when I last heard of her. Dr. J. Worth Gray of Oklahoma City, assisted with this operation. Diagnosis, syphilitic spleen.

Slide 3 shows a lipoma corpus adiposum buccal before removal. The next two slides show the tumor (two slides) after removal. The origin of this tumor is the infantile sucking pad located and wedged between the buccinator and masseter muscles covered by superficial fascia and zygomatic muscle. This patient was a woman 73 years of age, and lived in comfort until the ripe old age of 82. She first noticed this tumor when 20 years of age and carried it gradually growing for 53 years. It was so large and heavy that she had to have an extra pillow for it at night. She said to me when I did the operation, "If you can just give me one year of freedom from that thing, I will be happy." She got nine years of perfect comfort. This tumor was removed in 1921 and weighed six pounds net at time of removal. Angus L. Cameron, Rochester,

Minn., in J. A. M. A., March 19, 1931, collects and reports sixteen cases. This tumor was larger than any reported. Dr. J. F. Park, McAlester, Okla., assisted me in the removal of this tumor.

The next slide is a uterus didelphys removed, May 6, 1916, assisted by Dr. T. T. Norris of Krebs, Oklahoma. You will note the single cervical canal which bifurcates and goes out into each respective uteri. Note the single tube and ovary attached to each half. The pre-operative diagnosis in this case was walled off pyosalpinx of long standing. This woman was near the menopause, married a number of years, never pregnant. Each month she suffered so severely from dysmenorrhea that she had to go to bed the entire time and have morphine. The rest of the month she was entirely well and active, no morphine until next menstrual epoch. On account of the palpable tender tumors, it was decided to remove these pus tubes. Imagine our surprise when we uncovered the specimen you see on the screen, which was trimmed up before kodaking. This slide is made from a drawing of the kodak negative. After convalescence she has been entirely well and free from her monthly terror.

The next slide is that of a cervical polyp which grew for years and underwent fibroid degeneration. The patient was a woman 70 years of age who came into my office and said, "Doctor I have something 'anging out of me," (she was English). She said she " 'ated to but she would just 'ave to show me." When I had her placed on the table, I decided that she did have something hanging out of her myself. The dark spot you see near the top of the tumor is an eroded area caused by the pubic hair, as she carried this tumor turned up over her pubes supported by a perineal pad. It was easily discernable that this tumor was attached to the cervix, and as the uterus was entirely prolapsed, vaginal hysterectomy was easily done and she made a speedy and complete recovery.

The next slide is the tumor after removal and the probe is in the uterine canal. This operation was done December 18, 1919. No assistant; anesthetist, Dr. L. C. Kuyrkendall, who many of you will recognize as the front end of this tumor, but it was not on the other end of him.

The last slide is a railroad bridge washer. The opening you see will allow a nickel to pass through but will not admit a quarter. The flat surface around the opening is one inch in diameter. The diameter of the reverse side is three inches, weight 13 ounces. On April 19, 1919, 2:00 A. M., Dr. H. N. Bussey called me to come down town as he had something he could not talk over the telephone. When meeting the doctor and his patient, a man about forty years of age, you can imagine my astonishment when I tell you that he had his penis through this hole and the reverse side of the washer as you now see it clear up against his abdomen, and said penis was about twice the size it would be in a normal state of erection. Every one thought the penis would have to be amputated, yet I would not give up. I split a rubber glove in half, slipped about one inch through from front to abdomen with a mosquito forcep. Then I fixed the short end with a standard size hemostat and began to wind in front following the wrapping with the washer until I had it about one-half way removed. It began to look like I was going to burst the glans, so I took a fine point bistoury and made small punctures in the cutaneous surface distal to the washer. Immediately it began to spray serum like a park fountain, and reduced rapidly in size so that one more wrapping removed it easily. I asked the fellow what in the world he was doing getting in that fix. He said, "Oh I was jus' projjikin." If you know what that means, you will understand; I have been unable to find it in the dictionary. Dr. H. N. Bussey now of this city helped me with this case. That is all and when the lights come on I will show you the original washer.

FAMILIAL EPIDEMIC OF ACUTE DIFFUSE GLOMERULO-NEPHRITIS: RELATION TO PATHOGENESIS OF DISEASE

A Carlton Ernestene and George P. Robb, Boston (Journal A. M. A., Nov. 7, 1931), record a familial epidemic of acute diffuse glomerulonephritis not due to scarlatina. Eight of ten children successively developed an acute infection of the upper respiratory tract and, in six, symptoms and signs of acute diffuse glomerulonephritis appeared during convalescence. The interval elapsing in each case between the onset of the acute infection and the appearance of nephritis supports the hypothesis that acute diffuse glomerulonephritis results from the development of a state of hypersensitiveness to the primary infection. Although cultures from the throats of all subjects yielded streptococcic, absolute proof as to the precise identity of the organism causing the primary infection could not be obtained.

INTRAVENOUS ANESTHESIA WITH SODIUM AMYTAL IN SURGERY

A. L. BLESH, M.D., F.A.C.S.
Oklahoma City Clinic Building
OKLAHOMA CITY

From time to time with the discovery of one anesthetic after another, the announcement has been made confidently that now the ideal anesthetic has been found. Chloroform has had its day; ether waxed strong and is going well yet; anoci-association, that is a combination of one of the gases, mostly nitrous oxide and local, still stands well in the favor of the discriminating; ethylene, while recognized for its wonderful anesthetic properties because of its explosive nature, has put the fear of the Lord in the general professional mind to the extent that its use has been much curtailed in spite of its otherwise most desirable qualities; local by infiltration and block is the mainstay of only a few surgeons and does not bid fair to become the general anesthetic. The element of psychic impact while imponderable is real with some patients and it cannot be gainsaid that very special training is necessary to its satisfactory use. Spinal has had a tortous climb to the special favor of a rather small but growing percentage of the profession. There are certain and positive advantages to both patient and surgeon in its use but in addition to the psychic factor mentioned, there is also the lowered blood pressure which to many is alarming, to be reckoned with.

What then are the principles of an ideal anesthetic?

1. Ease of administration and freedom from distress to the patient.

2. Complete anesthesia so that the patient will have no disturbing, painful memories.

3. Safety to the patient either from sudden anesthetic death, postoperative visceral degenerations, lung involvement or extraneous dangers from explosions.

4. Freedom from nausea during convalesence.

5. No operating room memories.

All of the anesthetics mentioned are open to one or more of these objections, yet all have stood the profession well in hand during the past.

The interest shown by the profession in the study of anesthesia and anesthetics has resulted in the discovery of new ones and in the more scientific use of all of them. The surgeons who have the interests of their patients at heart are no longer satisfied with an untrained anesthetist. An anesthetist in the modern sense is a highly trained specialist. The responsibility assumed by the anesthetist is today recognized as comparative to that of the surgeon. It is assumed in all the propositions laid down in this paper that a responsible anesthetist is in charge of any and all anesthetics. The selection of the proper anesthetic for the patient and the disease is looming larger all the time.

Sodium amytal is an anesthetic best administered by the intravenous route. It is open to the same objections as spinal and that the dose once administered is beyond recall. This is not an insuperable objection provided great care is exercised. The drug should be administered "to effect." Our rule has been to inject slowly taking about 10 minutes and after the patient has quietly dropped to sleep to continue the injection until two or three more grains are given. The patient will often lapse into sleep in the middle of a sentence leaving it unfinished. It has never failed to produce a deep slumber. We think however, that a slumber deep enough to permit painful surgery without being reinforced by an inhalation anesthetic is so profound as to be dangerous; hence we have used it only as a basic anesthetic.

As is well known our clinic has always advocated and practiced the lightest possible general anesthesia which when reinforced by local, and surgical strategy is consistent with a good surgical delivery. We believe a profound anesthesia with any general anesthetic including sodium amytal is an overdose and harmful and is to be avoided when possible. We believe in and practice ways and means to make this possible. Mixed anesthetics will often help since no one possesses all of the desirable qualities. Combinations with local is our greatest aid. We use this also with sodium amytal.

METHOD AND DOSAGE

Sodium iso-amylethal barbiturate (sodium amytal) is a barbaturic acid derivative and shares with all the barbiturates in its hypnotic quality. In sufficiently large doses it is also anesthetic. While we have not used it in our clinic in an-

esthetic dose because we feel that without a specially trained nurse in constant attendance upon the patient, it would not be safe in this sized dose, This being true it is unsuitable to be used in this dosage as a routine anesthetic, for the reason that not nearly all patients can afford the price of such an attendant. We would have little fear of it in case such precaution could be taken. Our dosage has been from 11 to 15 grains, the average about 12 grains.

The drug comes to hand in ampoules ready for intravenous administration, prepared by Eli Lilly Company and is not yet on the open market but in passing I wish to say that they have been most courteous and liberal in supplying the clinic.

In beginning its use the clinic selected Dr. J. H. Robinson of the clinic to supervise its administration and teach the method of its administration and our success and safety in its use we feel has been largely due to his careful supervision. At the present time we use it confidently in properly selected cases. Because of its prolonged effect we do not feel it to be suitable for mouth and throat operations since the patient would unconsciously swallow large quantities of blood should there be more or less post-operative bleeding.

The drug is administered slowly about 1 c.c. from the ampoule per minute. So soon as the patient drops to sleep, which will be when from 5 to 10 grains of the drug has been introduced, 2 or 3 grains more are introduced at the same rate of speed. This insures a profound slumber within perfectly safe limits which will endure for from 6 to 10 hours. While the slumber is profound with this dosage, it is not sufficiently anesthetic to proceed unsupported with the operation, but must be re-inforced with a small amount of inhalation anesthetic, nitrous, ethylene or ether as preferred. For this purpose very little is required and relaxation is good.

The patient's mental reaction to the drug is good and all of them have expressed delight at having no unpleasant memories of the anesthetic or the operating room.

Convalsecence has been smoother with few exceptions which will be mentioned later, especially for several hours immediately following operation. The patient sleeps quietly and requires much less narcotics and there is less nausea.

In waking there is sometimes delirium which in all our cases has been mild and easily controlled with 1-6 grain morphine or 1-3 grain pantopon.

Blood Pressure is always lowered. Average systolic 30 points, diastolic about the same; the maximum fall of the systolic is 90 points. Patients with a low normal do not seem to have the decided fall in pressure that those do with hypertension either of a high or low degree. We have noted that low pressures often become elevated soon after the amytal, increasing during anesthesia. To illustrate, showing just the blood pressure only:

Case No. 1 Normal 88-52, 10 min. 80-60, Close of operation 106-70.

Case No. 2. Normal 110-60, 10 min. 110-60, Close of operation 130-80.

Case No. 3 Normal 102-80, 10 min. 142-90, Close of operation 106-68.

Usually the blood pressure returns to normal or slightly above after 15 to 20 minutes.

Pulse upon administration is usually increased from 10 to 20 points, returning to normal after 15 to 20 minutes if there are no operative complications.

As the appended table will show we have used the drug as a basic anesthetic in practically a routine way as to age and condition except in young children.

Routinely we have used a preliminary narcotic of morphine grain 1-4 atropine grains 1-150. A few cases in which this was neglected, waking delirium was more pronounced.

Repeated uranalyses have shown no changes in the renal output or in its composition attributable to the anesthetic. This has been a clinical observation also. There seems also to be no discoverable blood deteriorations incident to the anesthetic.

With the introduction of any new anesthetic in routine work, the working personnel will be "jumpy." Because of this I have been called from the operating room twice only in this series of 100 cases to resuscitate supposedly serious conditions. In both instances the patient did not appear to be in any serious trouble but was a little cyanotic because of impeded respiration on account of the tongue falling backward from relaxation.

Relaxation is one of the advantages of

this anesthetic but it can never be had without paying the price of watchfulness.

From the cases which are summarized in the appended table, a few only will now be reported in brief detail.

Case 1. Mr. W. J. Age 28 years, came under the care of the clinic from a hospital in Norfolk, Virginia, to which he had been taken for multiple fractures, the result of a fall of some 40 feet. These fractures consisted in a compound comminuted fracture of the right femur, fracture right olecranon, right wrist, left wrist, and base of skull with brain damage. Condition bad, had been extremely critical and no attempt had been made to reduce the femoral fracture because of the serious condition of the patient and in addition to muscle retraction a very severe infection had occurred.

After prolonged preparation an attempt at open reduction or adjustment was made July 31, 1930, under sodium amytal, grains 12, intravenous; no preliminary narcotic for the reason that the patient had become an addict during his long illness and great difficulty had been encountered in with-drawing the drug. Condition poor because of prolonged sepsis. Temperature 99.4; pulse 84; blood pressure 100-50.

Op. begun	9:15	P. 98	R. 20	B. P.	100-80
	9:30	P. 116	R. 24	B. P.	120-90
	9:45	P. 132	R. 26	B. P.	126-92
	10:00	P. 140	R. 32	B. P.	118-90
Shock	10:10	P. 150	R. 34	B. P.	85-0
Adrenalin Caffeine	10:15	P. 160	R. 30	B. P.	0-0
Sodium Benzoate	10:20	P. 162	R. 34	B. P.	100-0

Operation discontinued, condition critical. Returned to bed and treated for shock with prompt reaction. Fully conscious in 7 hours. No memory of preceding events. Had been extremely restless post-operatively, screamed and tossed about; morphine in heavy doses necessary for control.

Continued septic from old infection of femur. Amputation advised and done after three weeks preparation. Sodium amytal grains 10 given. Amputation thigh upper ⅓; blood transfusion at close of operation. Awake in seven hours. Recovery uneventful. Discharge from the hospital in three weeks.

This case was probably the greatest surgical risk in the entire series.

Case 2. Reported because of bad condition of kidneys. Male, physician, age 78 years. Had carried a catheter in his pocket to relieve his urine for twenty years. Patient entered the hospital delirious on a cold day, December 18, 1930, thoroughly chilled from a 200 mile ride in a Ford touring car. Diagnosis was adenoma prostate, obstructive with pyelonephritis and cystitis—renal shortage 50%. Blood chemistry corroborative, uremia.

He was a fairly nourished man, condi-

OPERATION	No. Cases	Sex	Age	Dosage	P.O. Vomiting	P. O. Nausea	P. O. Delerium	Died	Cause of Death	Recovered
Hysterectomy	18	F	28-58	Gr. 9-13	1 Severe	1 Very slight	0	0	0	18
Salpingectomy	9	F	18-35	Gr. 8-11	0	1 slight	0	0	0	9
Fractures	2	M	18-35	Gr. 8-11	0	0	1 Mild Shock	0	0	2
Amputation Femur	1	M	28	Gr 10	0	0	0	0	0	1
Hemorrhoidectomy	2	F	24-25	Gr. 5-7	0	0	0	0	0	2
Laparotomy Exploratory	2	M	58-65	Gr. 9-10	0	0	0	0	0	2
Thyroidectomy	3	F	40-53	Gr. 8-9-10	1	1	0	0	0	3
Herniotomy	10	M	28-46	Gr. 10-15	0	0	0	0	0	10
Resection Intestinal	3	F	40-58 64	Gr. 7-12	0	0	0	2	Shock	1
Prostatectomy	3	M	60-66-67	Gr. 7-9	0	0	0	1	9 Days P. O Uremia	2
Cystostomy	1	M	78	Gr. 7	0	0	Marked	0	0	1
Trachelorrhaphy	4	F	28-40	Gr. 10-11-12	0	0	0	0	0	4
Mammectomy	3	F	43-46	Gr. 6-11	0	0	0	0	0	3
Suture Gastric Ulcer	1	F	36	Gr. 7½	0	0	0	1	Shock	
Enterostomy	1	F	51	Gr. 8½	0	0	0	1	Shock	
Drainage Lumbar Abscess	1	M	34	Gr. 12	0	0	0	0	0	1
Cholecystectomy	7	1 M 6 F	32-60	Gr. 8-15	1	1	0	0	0	7
Appendectomy	12	4 F 8 M	17-50	Gr. 7-13	0	0	1 (Moderate)	0	0	12
Pelvic Op. Shortening Round Ligaments	12	F	17-47	Gr. 7 13	2	2	1 Slight	0	0	12
Fistula—Rectal	1	F	29	Gr X	0	0	0	0	0	1
Exeresis Nerve	2	F	72-79	Gr. 6-9	0	0	0	0	0	2
Osteotomy	1	M	28	Gr. 12½	0	0	0	0	0	1
Suture Crucial Ligament	1	M	28	Gr. 15	0	0	0	0	0	1
TOTAL	100		Youngest 17 Oldest 79	Average Dose Gr. 11	5	6	1 Slight 2 Marked 1 Moderate	5		95

tion poor due to above and to sepsis and pain. Temperature 100, pulse 88, blood pressure 136-70.

Operation—s u p r a pubic cystostomy, sodium amytal grains 13, intravenous.

Unconscious	8:30	P. 80	R. 28	B. P. 110-68
	8:45	P. 100	R. 20	B. P. 140-80
	9:00	P. 96	R. 24	B. P. 130-50
Closure	9:30	P. 96	R. 22	B. P. 124-68

Delirium continued and increased until after twelve hours the patient became uncontrollable requiring constant attendance. He was stuporous with short intervals of apparent lucidity. Renal condition unresponsive to treatment.

At the end of ten days the wife insisted upon taking the patient home in the Ford touring car a distance of 200 miles. Patient put to sleep with another intravenous sodium amytal since he could be restrained in no other way, bundled into the back seat, reaching home after the long drive still sleeping. Death reported one week later. Death due no doubt to uremia.

There had been no appreciable affect on the gradually progressive uremia with which he was admitted to the hospital.

SUMMARY

1. All of the 100 cases showed a smooth anesthesia with better relaxation than with any inhalation anesthetic alone.

2. The mental reaction was pleasant in all cases. No disturbing memories of the surgical ordeal.

3. Nausea occurred in only six and vomiting in five. Nausea was slight in all, severe vomiting in one only.

4. The average dose was 11 grains, largest dose 15 grains, smallest 5 grains.

5. Youngest patient 17 years, oldest 29.

6. Administration must be carefully supervised and the patient looked after carefully until awake.

7. Delirium occurred in only four cases, that is 4%, in one slight, one moderate and two marked. In all it was easily controlled by morphine or pantopon and it occurred only in those patients who received no preliminary narcotic.

8. In the five deaths in this series, none could be charged to the anesthetic. Two were intestinal resections in practically hopeless cases of advanced carcinoma; one an enterostomy for a practically moribund intestinal obstruction; one from peritonitis due to a perforating gastric ulcer of many hours' duration, and one from uremic coma in an old prostatic with advanced pyelonephritis in whom only a cystotomy had been done, the death occurring several weeks following operation.

9. A uniform fall in blood pressure of an average of 30 systolic and diastolic occurred. This tends soon to return to normal (15-20 minutes) and the pulse is increased from 10-20 points following the blood pressure back to normal.

For the careful studies in this paper, I am indebted to the chief of the anesthetic department of Wesley Hospital, Miss Beatrice Whitehead.

301 West 12th St.

—o—

CLINICAL STUDY OF ASCARIASIS

A. E. Keller, Horton Casparis and W. S. Leathers, Nashville, Tenn. (Journal A. M. A., Aug 1, 1931), studied the clinical conditions found in 107 cases of ascariasis in white children and in 60 cases in Negro children, with 54 white controls and 69 Negro controls. A history of disturbed sleep was obtained in 60 per cent of the cases in white children and in only 15 per cent of the white controls, while in only 20 per cent of the Negro patients and 22 per cent of the Negro controls was this complaint present. Abdominal discomfort was present in 70 per cent of the white patients and in only 7.4 per cent of the white controls. It was present in 60 per cent of the Negro patients and 30 per cent of the Negro controls. The physical conditions were those which can be demonstrated in any average group of rural children. Protuberance of the abdomen was present in 60 per cent of the white patients and in 22.2 per cent of the white controls. It was present in 33.3 per cent of the Negro patients and in 23.3 per cent of the Negro controls. There were no significant changes in the total red blood cell counts, hemoglobin or total leukocyte counts in the cases and controls as groups. The differential leukocyte counts revealed an average eosinophilia of 8.9 per cent for the white patients and 5.3 per cent for the Negro patients. Both white and Negro controls had eosinophil counts which varied from zero to 10.5 per cent. The average eosinophil count, however, for both control groups was 2.9 per cent, which is considered normal. The eosinophilia does not appear constantly in cases of ascariasis, 16 per cent of the white patients and 31.6 per cent of the Negro patients showing an eosinophil count of 3 per cent or less. No definite correlation between eosinophilia and the intensity of infestation could be demonstrated. No correlation between the age of the patient and eosinophilia could be shown. This analysis presents few observations on which a clinical diagnosis of ascariasis may be based. The parasite causes abdominal discomfort and disturbed sleep. That the parasite causes some disturbance in the host is seen by the presence of eosinophilia. The negative clinical observations that are presented emphasize the importance of the routine examination of feces in a diagnosis of ascariasis.

EXTRA UTERINE GESTATION

JAS. L. SHULER, M.D.
DURANT

Under normal conditions the human ovum is fertilized in the fallopion tube and passes into the uterine cavity for future development, but it, at times, happens that the ovum is fertilized and partially developed in various points of the tube between the follicle, in which it originated and the normal location in the uterine cavity and is termed extra-uterine gestation and since the illustration by Lawson Tait in 1883, has been recognized as a definite pathological condition.

We find some history of this condition, even as far back as the eleventh century, when the first recognizable description of the condition was given, but for centuries thereafter, but little or no mention was given, until so graphically illustrated by Tait in 1883.

For all practical distinction of the varieties of ectopic gestation, we may classify under three distinctive headings; as first, of tubal proper, or when the ovum becomes located in that part of the tube between the cornu of the uterus and the fimbriated extremity, in this part of the tube is where most of the locations are situated and in that ratio is the most important in consideration.

Tubo-ovarian is where lodgment takes place in the outer extremity of the tube, this rarely occurs, but when this does take place, it is most likely to result in what is termed tubal abortion.

Tubo-uterine or interstitial we may term as where the ovum is arrested and takes lodgment in the uterine wall.

Different causative conditions of pathology in the tube might be studied, which tend to arrest the progress of the fertilized ovum between the ovary and the cavity of the uterus.

Inflammatory changes in the mucosa of the tube interfering with the peristalsis and the normal capacity of this organ may be considered as the most general cause.

Peritoneal adhesions by distorting the tube and other causes, pyosalpingitis might be considered as the chief cause.

Whereever the ovum may be implanted in the course of the tube, development will begin and the process is somewhat similar as if in the uterus, following the location of the ovum in the tube, the wall of the tube begins to thicken, due to the stimulation of the fertilized ovum, vascularity is stimulated by this excitement and as the progress of the ovum continues changes take place in the uterus and vagina, somewhat as in uterine gestation, as development continues the walls of the tube become distended to its full capacity and yields under the pressure and terminates the process.

The symptoms of ectopic gestation are most important and should be more carefully studied by the general practicing physician, as to him the responsibility rests for the first attention in the majority of this class of cases.

In most instances there has been some irregularity in the menstrual function, the period having been delayed, if there has been no missing of time, most likely, there has been some departure from the accustomed amount and continuance of the flow; a careful investigation as to the history may reveal that instead of the usual onset there has been a sudden gush of hemorrhage followed by a discharge not of the usual character.

In most instances, symptoms of pregnancy are given, such as nausea, lassitude and general discomfort, but these symptoms may be less pronounced than in normal pregnancy, the belief of the patient that she is pregnant is a point to be considered and further, if found that a period of sterility had existed for some time prior to the onset and that there had been more or less uneasiness in the region of the ovaries in one or both sides would add materially to the diagnostic symptoms.

Quite often the symptoms have been so indefinite that the patient has not consulted a physician and has not known of the impending danger until she is suddenly seized with sharp agonizing pain in the abdomen, followed by faintness, pallor, the pulse rapid and feeble, all the symptoms of hemorrhagic shock, a complete fainting collapse, these latter symptoms are so definite of the rupture of the tube that no mistake should be made as to the condition.

In most instances, after the collapse, the bleeding checks and the patient rallies, but bleeding continues, the abdomen gradually fills with blood until within twelve to twenty-four hours distention is quite dis-

tinct, the patient continuing very weak and pallid, no rise of temperature which is a very conclusive symptom to bear in mind.

DIFFERENTIAL DIAGNOSIS

The condition most likely to be confusing in making a diagnosis of tubal gestation is a tube distended with serum or pus and more especially the latter. The physical symptoms very closely resemble each other, that is prior to rupture, as the rupture of a tubal gestation is followed by shock and definite symptoms of internal hemorrhage and may later follow with some appearance of peritonitis, yet is very rare. So might the rupture of a pus sack give evident shock, but not of so marked a degree as from the rupture of a gestation tube with the consequent hemorrhage.

The clinical history of the two conditions will lead to the differentiation rather distinctively; in tubal gestation you will not likely have the rise of temperature, while with an infection there will have been a marked temperature, in the former, the symptoms of an early pregnancy, not in the latter, during the period before rupture, the rather soft boggy feel of the pregnant mass as distinctive to the tight, distended touch of the pyosalpinx.

Tumors of the ovary might confuse the diagnosis, but the study of the menstrual history and an inquiry and study as to the physical signs of pregnancy should lead to a correct conclusion.

PROGNOSIS

Every stage of the progress of extrauterine gestation must be considered one of the most appalling and perilous conditions which may threaten a woman's life. There is imminent danger in every moment that such condition exists. It is true that some cases may and do recover, but no one can know just what may be looked for while the condition continues; the termination must most certainly, come to a hazardous climax sooner or later, there is no shifting of this situation.

It is a most harrowing thought that a patient must face the eventful termination of a tubal rupture with the fearful dangers that follow. If the condition could be known in due time and proper surgical protection provided there would be a different shade to the dark picture, but unfortunately, only by chance can an occasional case be diagnosed and warning given.

Ectopic gestation furnishes a list of mortality that is shocking to contemplate.

In considering hematocele or the accumulation of blood in the abdome, formerly many causes were given for the existance of this condition, but operative experience has demonstrated that but one cause may be considered, ectopic gestation and the rupture of the tube or tubal abortion and except from this source there can be but rare exceptions, a possible exception might be a ruptured ovarian hematoma, but no great amount of blood should be expected from a condition of this kind. Purulent accumulations may be accounted for as from the same condition and the suppurative process has been possible from some infection entering into the accumulation by way of the uterus and through the stump of the ruptured tube.

In my limited experience I have opened the posterior culdesac for accumulated hemorrhage, but one time, this following tubal rupture, the blood had been accumulating for a week and had so filled the abdomen till it had the contour of a full term pregnancy. However, I should state that this was not the operation of choice for safety in such conditions. Have opened the culdesac for purulent accumulations in delayed cases and certainly believe this the choice operation for safety. Have noted that most of such cases have given a history of tubal gestation and rupture.

With the present knowledge of extrauterine gestation and with the confirmed results of surgical treatment, all other methods should be discarded and regarded as temporizing with the life of the patient.

In considering treatment shall vary the thought to some degree as to whether before rupture of the tube, at the time and later after the rupture.

As a result of the definite study of the symptoms and the increased knowledge and familiarity with the condition, certainly, should give opportunity for greater protection from rupture.

When an ovum is recognized in its original site in the tube a timely operation prevents the serious consequences of rupture which if left unattended must certainly happen.

The operation in this stage of the condition is very simple in technique and when under proper precautions is without risk.

The operation consists of abdominal incision in the median line, or some variation as to choice, through the structures into the peritoneal cavity, and there should be no difficulty in locating the tube mass in which the ovum is contained, this to be clamped and the entire mass removed, the clamped portion tied securely and stitched over and closure without drainage.

The opposite tube should be examined and if found to be diseased in any way, as is often found to be the cause of tubal ovation, this too should be removed; in exceptional cases it may be found necessary to remove the ovaries, or perhaps one of them, the ovaries or a part of one or both should be left if this can be without risk of infection.

TREATMENT AT THE TIME OF RUPTURE

In the majority of cases of ectopic gestation rupture will take place very unexpectedly, as the condition had not been thought of at all. The patient will have been seized suddenly with severe pain in one side in the ovarian region and most likely have fallen down in a faint or collapse and will show the definite symptoms of profuse internal hemorrhage.

The family physicain will be called in haste, the condition should be recognized and preparations made hurriedly to save the patient's life by prompt surgical measures, but fortunately, in most instances, the hemorrhage checks from depressed circulation and the patient rallies, the bleeding will not continue so freely; it seems that nature had provided this way of escape. During this time of reaction no time should be lost in making hasty preparations for operation as soon as the patient can be carried to hospital.

It does not matter how profound the shock and collapse an effort must be made to save the patient's life, the abdomen must be opened, the bleeding arrested. It must be expected that the prepartion and the operation be carried out with the usual operative care. While the arrangements are being pushed, the general welfare of the patient must be looked after, stimulants given, warmth applied. In preparing abdomen for operation only light pressure must be permitted.

As soon as the abdomen can be opened the uterus and the ruptured tube should be brought into view, a clamp placed on the outer border of the broad ligament and another one applied to the uterine end of the tube, the clamps will control the bleeding and the tube can be removed and ligatures securely applied. The clotted blood can now be removed with the hand and the abdomen gently cleansed by moist sponging.

Under conditions of profound shock delay might be considered, but this decision would be assuming a vital responsibility.

I thought of mentioning a case of interstitial or tubo-uterine gestation that was placed under my care and responsibility. This happened in my early professional life, about the year 1895 or 96; this was at a time when we did not know so much about abdominal surgery, and especially about abdominal operative procedure for tubal pregnancy.

This patient was the wife of a physician who lived in a neighboring town. She was the mother of three or four healthy children, but she was in rather failing health; she became pregnant, as they thought, normally. She developed very distressing and alarming symptoms with no relief by the ordinary means of treatment. He, with another doctor of his town, thought to relieve her of the pregnancy by curettement, but failing to find anything in the uterus, they called me in consultation and after thorough exploration we came to realize that we had a case of tubal gestation to deal with and we decided that very soon some operative procedure must be resorted to. We decided to await further development in the case and consider the method of operation; she was at that time past two months in gestation.

The responsibility was placed squarely up to me to determine what the operation would be, and that I must do the work; they were to call me when a change was noted.

I felt some pride in the distinction and really do appreciate responsibility, but this was one time that I felt a decided dread of what might be the result; here was my friend and his family in distress, he was looking to me to assume the responsible task of deciding upon a method of operation that should save the life of his wife, and, it seemed that he felt sure that I would do that. I have never understood why he could feel that way about the matter.

I drove home feeling that the burden was with me; during the following days I had decided upon an abdominal operation,

prepared for it in every way as best I could. Time was not long until I was called to come prepared to do an operation, as his wife was suffering very much. Found her having rather severe and regular pains; something must be done, it was then getting dark and lamp lights. Upon examination found that there was the mass pressing right down beside the uterus in the vagina and through the vaginal wall was decided upon as the route to cut through to reach the tube and contents.

The doctor began the administration of the anesthetic, I was ready and waiting, but I have never known a patient to be so long in becoming anesthetized. It must have been not less than thirty minutes, when she was ready for operation. I was making a final examination, found the os very dilatable and by manipulation passed the index finger through the internal os and by exploration found a definite protrusion through the cornu into the uterus and upon this finding decided that it was best to await for natural results. I assured them that the contents of the tube was passing into the uterus and that it would pass entirely within twenty-four hours, which it did and was completely passed from the womb in due time.

Since that time I have had another case that terminated in the same way.

DISCUSSION: *Dr. E. P. Allen,* Oklahoma City:

I enjoyed the doctor's paper very much. When a woman comes to the office, and gives a history of having missed a period of two weeks interval, heaviness in the pelvis and occasional spotting of blood, that is very important in the diagnosis of extra-uterine pregnancy. On examination, we can usually feel a mass and we should warn the patient or her husband of a possibility of ruptured ectopic pregnancy, and we should advise her to go to the hospital. The diagnosis is almost made in the history of the patient. These women must be transfused, and we must get the patient ready for transfusion as quickly as possible and while the surgeon is operating, someone else gives supportive treatment.

DISCUSSION: *Dr. J. M. Byrum,* Shawnee:

I have enjoyed this paper very much and I do not wish to discuss it. Last week in Maude, Oklahoma, I saw a patient who had been delivered 7 weeks previously of a normal baby. She had a splendid concalescence for 6 weeks, when she developed pelvic peritonitis and we did not know whether appendicitis was giving the disturbance or not. She had a mass in the pelvis and the lower abdomen was rather fixed and we decided to explore. We found a colored mass which I thought was a gangrenous intestinal obstruction. In working around, I turned up a placenta about the size of a six months pregnancy. She had a double pregnancy, one in the uterus and one in the tube. We merely used some packs and closed the adbomen.

DISCUSSION: *Dr. W. P. Fite,* Muskogee:

In appendicitis and ectopic pregnancy we are much like kitchen silver, we all need to be shined up now and then. Any woman within the menstrual age who is married is a possible candidate for ectopic pregnancy or any pregnancy. The outspoken case of ectopic pregnancy or rupture is easy to diagnose. We have trouble in which we suspect one is present and we cannot prove it. We must go into the menstrual history carefully. Tubal abortion takes place about one month after pregnancy. The average rupture takes place about 6 weeks after pregnancy. Occasionally we see cases come in where they have had rupture or suspected rupture and there is no way to tell except from the history whether we have a chronic pelvic inflammatory condition or an ectopic pregnancy. We have to depend almost entirely upon the history, and sometimes the history is not worth much.

Dr. A. C. Hirschfield, Oklahoma City:

I think this paper is an outstanding example of the fact that eternal vigilance in the diagnosis is the price of a life. There are so many variations in ectopic pregnancy that we cannot always be too careful. If we suspect it, feel a mass, or if in doubt, we should operate. Sometimes we cannot get permission to operate. I have had two interesting cases. Several years ago I operated a very typical case of ruptured ectopic and found the belly full of blood, and a bleeding tube. I looked at the other side, and there was an ordinary hydrocele. I removed it and it was full of blood. I found that there was placental tissue in the tube. This patient had had a previous ectopic pregnancy with encysta-

tion. One and one-half years ago I sent a healthy young woman into the hospital for operation for what I thought was acute, fulminating appendicitis. She objected to the operation because she thought she was pregnant, having missed a period. I was confident however that she had appendicitis. Upon opening her up I found a belly full of blood and clot. There was a bleeding tube so I clamped it off and removed it. I went up higher and found some matted down omental tissue and took out a gangrenous appendix with a bleeding tip. The appendix had been adherent to the ruptured tube, and had become acutely inflamed.

I sent the specimen to the laboratory without comment and the laboratory reported suppurative appendicitis or acute gangrenous appendicitis. There was a case where we had both conditions with typical signs of appendicitis.

Dr. Jas L. Shuler: Closing discussion:

I wish to thank the gentlemen for their nice discussion of the paper. I appreciate it very much.

THE SUMMER-TIME USE OF VIOSTEROL

During the hot weather, when fat tolerance is lowest, many physicians have found it a successful practice to tranfer cod liver oil patients to Mead's Viosterol in Oil 250 D.

Due to its negligible oil content and its small dosage, Mead's Viosterol in Oil 250 D does not upset the digestion, so that even the most squeamish patient can "stomach" it without protest.

There are at least two facts that strongly indicate the reasonableness of the above suggestion: (1) In prematures, to whom cod liver oil cannot be given in sufficient dosage without serious digestive upset, it is an incontrovertible fact that Viosterol in Oil 250 D is an antiricketic agent of choice. (2) In Florida, Arizona and New Mexico, where an unusually high percentage of sunshine prevails at all season's Viosterol in Oil 250 D continues increasingly in demand, as physicians realize that sunshine alone does not always prevent or cure rickets.

Mead Johnson & Company, Evansville, Ind., invite you to send for samples of Mead's Viosterol in Oil 250 D for clinical use during the summer months to replace cod liver oil.

ANEMIA—REPORT OF THE CASE OF MISS K.

WANN LANGSTON, M.D., F.A.C.P.
OKLAHOMA CITY

I first saw this patient in May, 1928. At that time she presented the following picture: She was in a fair state of nutrition, but stated that she had lost some weight. Her color was most striking, being an extreme pallor with a yellowish tint. The patient was in bed and it was the story that she had been in bed unable to walk for months, the history stating that she had a nervous breakdown in August, 1927. Following this nervous breakdown the history is that she suffered pain in the muscles of the legs, pain and tingling and loss of sensation in the feet. When attempting to walk, she had the sensation of walking on cushions and she could not walk in the dark.

At the first examination sensory disturbances were evident. The patellar tendon reflexes were brisk, the calf muscles were spastic and beginning foot drop was evident. In addition to this there were psychic changes; the patient's mentality had undergone a change—she laughed and cried easily. She was intolerant to noise.

At this first examination, patient was almost in a state of extremis. Her pulse was rapid and weak. The heart tones were very soft. There was a soft systolic murmur over the base of the heart and marked edema of the lower extremities. Besides the much weakened heart muscle there was great weakness of the voluntary muscles—so much so that the patient was unable to eat sufficient food because of sheer exhaustion of the muscles of mastication.

The story is that for years the patient had suffered with indigestion. Some six or seven years prior to the onset of her present condition she had been examined by a physician and found to have achlorhydria and had been treated for achylia. At the time of first examination she had the characteristic atrophy of the lingual mucosa and had complained of stomatitis. as well as indigestion. The indigestion was evidenced by pain in the epigastrium immediately after eating and a sense of fullness in the abdomen. She was never nauseated and had had no diarrhea.

Blood examination at that time revealed a red count of approximately one million cells with about 20% hemoglobin, poi-

kilocytosis, macrocytosis and microcytosis, basophilia, and normoblasts and megaloblasts. Thus you see we have a classified picture of the Addison-Biermer type of anemia. We have in this case evidences of all the pathological processes supposed to be characteristic of this type of anemia, *namely* a profound anemia of a hemolytic type as evidenced by the icteric discoloration of the skin: fortunately for the patient, still a hyperplasia of the erythropoietic system as shown by the large percentage of immature cells in the blood; organic changes in the posterior and lateral columns of the cord as shown by the neurological signs enumerated above, degeneration of the myocardium and of the other musculature of body and organic and functional changes in the gastro-intestinal tract as evidenced by the atrophy of the lingual mocosa and the history of stomatitis and achlorhydria.

Patient was placed on a very simple management. She was given a well balanced diet with a half pound of fresh liver a day, instructions being for the patient to eat as often and as much as possible. These instructions were because patient was unable to eat any considerable quantity at any one time because of muscular fatigue. Dilute hydrochloric acid five drams a day.

The response was immediate and almost dramatic. Within a week there was definite improvement. Within three months patient was on her feet and learning to walk again.

In November, 1928, the anemia had disappeared and the remission has been permanent to this day, the patient having had but one very slight relapse and that during a period when she decided to leave off the liver diet.

In November, 1929—one year after I first saw her—her red blood count was 4,720,000 with 87% hemoglobin, and no evidence of immature cells.

The blood count now at the present time is 4,790,000 red cells with 85% hemoglobin.

This case illustrates the beautiful, the almost dramatic results that may be expected to result from the proper management of this type of anemia.

Follow up of this case, November, 1931:

This patient was put on re-education management, in order to train the muscles, particularly of the lower extremities. As soon as she was able to exercise she was given passive movements, massage, and was assisted to walk. At first she w a l k e d with assistance; then with crutches, then with a cane; and now she gets around with facility without any assistance, carrying on her office duties without a great deal of difficulty.

Since the above report was prepared I have seen another case with complete paraplegia, who, with similar management is now able to carry on her household duties without difficulty. This case also showed the evidences of cord degeneration.

MECHANISM OF EDEMA IN RELATION TO CLINICAL CLASSIFICATION OF BRIGHT'S DISEASE (NEPHRITIS)

Henry A. Christian, Boston (Journal A. M. A., Aug. 1, 1931), has found edema a very useful basis of classification of Bright's Disease along with a time division into acute, subacute and chronic. Using these criteria he has formed a clinical classification that has been very helpful. properly to apply edema as one of the criteria of classification of Bright's disease or nephritis necessitates a reasonable understanding of the pathologic physiology of edema, and although the mechanism of edema is very complex and as yet far from thoroughly understood, recent investigation carried on in many different laboratories has added much to the knowledge of it, so that one is in a position so to formulate this knowledge as to aid in an understanding of the several types of Bright's disease. It is obvious that edema or the appearance of abnormal amounts of fluid in tissues and body cavities does not arise always from the same cause or, so to speak, does not always have the same mechanism. This permits one to subdivide edema into seven clinical verieties: cardiac, hepatic, renal, nutritional, anemic, inflammatory and anaphylactic edema. Of these varieties of edema, cardiac and hepatic edema have a very similar machanism; in the same way renal, nutritional and anemic edemas are closely related as are inflammatory and anaphylactic edemas. In the mechanism of these several varieties of edema there are concerned six significant factors: filtration pressure, osmotic pressure, permeability of vessel wall, salt content of the tissues, lymphatic drainage and nervous control. The exact part played by each factor is not fully understood as yet, and, when they act in various combinations, great complexity may enter into the process. However, a reasonable understanding of the mechanism of edema may be obtained by analysis of the action of some of these factors in a somewhat schematic way. This relatively simple clinical classification is a practical, easily applied and useful grouping of patents with Bright's disease. Almost every patient can be placed properly in the classification after relatively simple clinical study. Hence the author commends its use.

RARE ORBITAL TUMOR IN A CHILD —(EPITHELIOMA ADENOIDES CYSTICUM)—CASE REPORT*

ARTHUR H. DAVIS, M.D.
D. L. GARRET, M.D.
Springer Clinic
TULSA

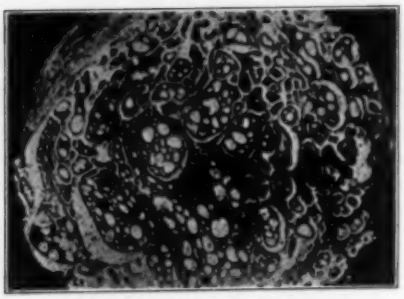


Photo Micrograph of section from tumor.

Tumors of the orbit have been divided into those which originate in the orbit but are unconnected with the globe of the eye, those which arise from the periosteum or bony walls of the orbit, those which commence in the cavities close to the orbit, and those which originate in some vascular disease within cavity of the orbit, or neighboring portions of the cranial cavity and which usually give rise to pulsating exophthalmos. Tumors arising from the optic nerve and from the lacrimal gland are included among the orbital growths.

Orbital tumors are either malignant or benign. They may be congenital or acquired, primary or metastatic. Small tumors situated in the posterior part of the orbit may be slow of growth and exist for long periods of time, without marked symptoms of their existence. Ultimately proptosis and swelling of the lid develop. These neoplasms, even when situated behind the globe, have been removed with preservation of the eye-ball for the cosmetic effect. The operation of Kronlein and of Knapp have been designed for that purpose. The former is accomplished by a resection of the lateral wall of the orbit and the latter by a temporary detachment of the medial rectus muscle.

Benign tumors, cysts and some encapsulated sarcomas can be removed according to these methods without sacrificing the eye-ball. The treatment of the malignity of the malignant growths require exenteration of the orbital contents.

*Read before the Osage County Medical Society at Pawhuska, October 5, 1931.

CASE REPORT

On September 6, 1930, Mrs. K., reported to the clinic with her son, age 5 years, with the following history:

Seven months before admission to the clinic, a slight protrusion of the left eye was detected. Nothing was done and in a short time the prominence of the globe became less noticeable and was almost forgotten. Three months later the mother again observed a bulging of the left eye. The deformity rapidly increased and the globe seemed to be thrust forward and downward. Vision became poor in the left eye. The child became irritable, complained of headache, did not sleep nor eat well and lost eight pounds in weight.

Family History: No facts pertinent to present illness.

Past History: Except for attacks of the acute infections, measles, mumps, whooping cough and chicken-pox, the child has been well, until the onset of the present disability.

Physical Examination: The general appearance is suggestive of defective development and malnutrition.

Head: Scalp—negative.

Eyes: Right—normal to external inspection. Fundus, normal; vision 20-20. Left—there is a marked protrusion forward, and displacement downward of the globe. Pain on pressure may be elicited over the globe and orbit. The patient was unable to distinguish small objects on the floor with the right eye covered. The media of the left eye were clear, the disc was swollen 2 D, vascular and red. The arteries were small in contrast to the veins which were enlarged and tortuous. No exudates nor hemorrhages were seen.

Eyelids: Negative.

Nose: Negative.

Throat: Tonsils hypertrophied.

Naso-pharynx: Large adenoid mass.

Further examination revealed no other pathological change. The blood Wassermann was negative. Blood 9-6-30. Hbg. 85%. R. B. C. 4,620,000. W. B. C. 13,600. Differential. Polys 43. Lymphocyte 41. Monos 9. Eosinophiles 7.

Radiological examination of the skull and left orbital region revealed as follows:

"Some disturbance in outline in the lower external aspect of the orbit. No definite statement can be made as to the cause, except that we believe we are dealing with an intra-orbital tumor, probably sarcoma." Upon the basis of the above findings and history, a diagnosis of intra-orbital, extra bulbar tumor was made.

On September 8th, the following operation was performed:

An incision was made through skin and soft tissues 1 cm. above and behind the external angular process of the frontal bone curving forward to the orbital margin, and ending about the middle of the zygoma. The incision was about 7 cm. long. This was followed by a resection of the lateral wall of the orbit. The tumor presented at once and section was taken for biopsy and was reported malignant.

Exenteration of entire orbital contents followed, leaving the lids and enough conjunctiva to support a prothesis. The tumor had no connection with lacrymal gland, no thickening or ulceration of eyelids and no destruction of periosteum or bone. On the following day (September 9, 1931), 102.5 milligrams radium was inserted into orbital cavity for eight hours.

REPORT FROM THE PATHOLOGIST

"The term "epithelioma adenoides cysticum" is the current name for a glandular type of tumor formerly called "cylindroma." The cylindroma was a tumor characterized by the formation of cylinders of mucinous material. The mucin was the result of degeneration of mucous producing epithelium that was embedded in strands in a fibrous tissue stroma.

According to Ewing the true epithelioma adenoides cysticum will have associated areas of myxomatous and chrondromatous tissue. If these are lacking the tumor is more properly called simply adeno-carcinoma. These tumors occasionally found in the orbit and are considered to be of lacrymal gland origin. When found in a location other than that of the true lacrymal gland, the origin is doubtless from a fetal rest of misplaced primary lacrymal gland anlagen.

The microscopic picture is characteristic. The epithelium is cuboidal and deep staining and forms cords and nests which show various degrees of dilatation with cystic content of mucinous or lymph like material. The stroma is of fibrous tissue and may be scanty or considerable in amount in the same tumor. Sattler calls these tumors basal-cell carcinomas."

The child was seen September 4, 1931, about one year after operation, had gained about ten pounds in weight, attending school, and there were no signs of recurrence of the tumor.

1. Arthur H Davis, M.D., Eye, Ear, Nose and Throat Department. D. L. Garrett, M.D., Department of General Surgery, Springer Clinic, Tulsa, Oklahoma.

CARDIAC PAIN

Don C. Sutton, Chicago (Journal A. M. A., Nov. 7, 1931), studied the pericardium, the myocardium, the coronary arteries and the aorta in unanesthetized dogs, with regard to the type of stimulus required to evoke the pain response and the location of nerve endings for pain. By such experiments in the dog and monkey (Macacus phenur) the following observations were made: Pricking or pinching of the parietal pericardium elicits a pain response; stretching or pulling does not. Neither mechanical nor chemical irritation of the visceral pericardium evokes a pain response. Stretching of the ventricular walls or local mechanical or chemical stimulation of the myocardium fails to produce a pain response. Temporary partial or complete closure of either a coronary artery or vein or of both invariably elicits a pain response. This is true of both the right and the left coronary arteries and their branches. This pain response was shown to be due most probably to the decreased flow of blood to the myocardium (ischemia or anoxemia). The severity of the pain varies with the amount of closure of the artery and, to a greater degree, with the size of the arterial branch constricted. The pathway of the pain response is through nerve fibers that accompany the coronary arteries and lie in the adventitia of the arteries. In the dog, the pain response from the heart passes to the central nervous system through the left sympathetic chain of ganglions. The pain pathway may be severed by destroying or narcotizing the nerve fibers in the perivascular tissue of the obstructed coronary vessel or by the removal of the stellate ganglion or of the annulus of Vieussens. Under procaine anesthesia, a dilator may be passed through the left internal carotid artery into the ascending aorta or further downward into the aortic ring. Stretching of either the normal aorta or the aortic ring fails to produce pain. In view of the theory that cardiac pain arises from the stretching of an acutely or chronically inflamed aorta, and in view of the possibility that inflammation may "sensitize nerve endings," experiments are now being conducted in which inflammation of the aorta is produced prior to experimental dilation or stretching. Preliminary observations indicate that pain does not result from stretching an injured aorta. Experimentally, a pain response has been observed to occur in the dog and monkey only when the blood flow to the myocardium is diminished or stopped. On the basis of his observations the author concludes that experimentally the pain response is caused by either ischemia or anoxemia. A great mass of clinicopathologic evidence further substantiates this conclusion.

THE JOURNAL

OF THE

Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under direction of the Council.

VOL. XXIV DECEMBER, 1931. No. 12

DR. CLAUDE A. THOMPSON.....Editor-in-Chief
Memorial Station, Muskogee, Okla.
DR. P. P. NESBITT.....Associate Editor
Medical Arts Building, Tulsa, Okla.

Entered at the Post Office at Muskogee, Oklahoma as second-class mail matter July 28, 1912.

This is the official Journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, Memorial Station, Muskogee, Oklahoma. $4.00 per year; 40c per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, Memorial Station, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

PRINTED BY HOFFMAN-SPEED PRINTING CO., MUSKOGEE

EDITORIAL

OUR NEW MOVING PICTURE FILMS

After viewing, studying and considering the films, Dr. L. S. Willour and the Committee of the Council, decided to purchase two films, one of four reels on "Application of Forceps," and one of three reels on "Eclampsia."

For the information of our membership these films are kept and serviced by the Extension Department of the State University, Norman, Mr. T. M. Beaird, Director. In order to obtain them certain requirements must be complied with, and they are as follows:

As the films are very valuable they cannot be entrusted to the care of an amateur, but must be shown by highly qualified and competent operators. It must also be borne in mind that the small expense, to and from Norman to the County Society desiring to show the films, must be borne by the County Society. It must not be forgotten either that it requires a long time to get these films over the many localities in the State and therefore they will be issued in the order in which the application is filed.

A description of the films is as follows:

THE FORCEPS FILM

Reel 1. Contains a brief history of the forceps instrument with pictures of Palfyn, the first inventor, Simpson and Tarnier and numerous models of the forceps; the definition of high, mid and low forceps; the mechanism of the instrument illustrated by an animated drawing; a brief consideration of the indications and conditions for forceps.

Reel 2. Shows the low forceps operation, giving the abdominal examination, the rectal examination and a panorama of the room prepared for operation.

The operation upon the patient is now performed, after preparation episiotomy is done, shown by models and then application of the forceps is made.

Reel 3. Shows delivery of the child and a few hints for the conduct of the Third Stage. Then a discussion of forceps in occiput posterior position and appropriate titles. First the child's head is turned by means of the hands, this being shown on a pelvis with a fetal head and then on the living patient.

Reel 4. Shows the Key-in-lock maneuver of instrumental rotation, both on the pelvis and on the patient. Episiotomy is done and the baby delivered. The system of baby identification and tying the cord is shown and an examination of the parturient canal for possible injuries; an inspection of the cervix, of the episiotomy wound and a few steps of the repair of episiotomy with a picture of the baby, complete the film.

ECLAMPSIA FILM

Reel 1. Gives the definition of eclampsia and purpose of prenatal care.

Demonstration of a patient with symptoms of early toxemia; also prescribing treatment.

Reel 2. A case of eclampsia complicated by hyperthyroidism, showing the convulsions, jactitation, the treatment and the resuscitation of the baby.

Reel 3. Shows the gross post-mortem findings in the liver and the microscopic findings in the liver, kidney, thyroid and duodenum; the microscopic findings in the baby and the picture of the post-mortem of the baby's head showing liquifaction necrosis of the brain and a new hemorrhage in the brain.

It also shows another case of eclampsia, convulsions and treatment with the final result."

GRAPE WINE CONCENTRATE LOSES OUT

Despite the splendid legal efforts of Mrs. Mabel Walker Willibrandt, and despite the equivocal postion in which she placed herself, (for formerly she was one of the most rabid proponents of prohibition, as well as one of the most active prosecutors of alleged illicit liquor dealings) the system by which one might purchase a keg of harmless grape juice with directions to leave it loosely corked in the basement, possibly skim off the excess occasionally, after which in a short time it would be found to be a very potable drink, the Federal Courts have decided, in substance, that this was a mere evasion of the Federal Anti-Liquor laws; therefore it may not be sold in such form any more. It seems too that one may not purchase compressed grapes to be used in much the same manner.

Senator Royal Copeland of New York, himself a doctor of no mean rating, has long charged that the authorities were "conniving" at an evasion of the prohibition law by helping to finance and sanctioning the production of grape concentrates by prohibiting home wine-making. A survey under authority of Director Woodcock, showed more than a billion gallons of wine of 12% alcoholic content have been made from California grapes, against which practice no action was taken by the Federal authorities; on the contrary it is charged that the Federal Farm Board had financed the production of grapes and grape concentrates for home wine-making, for a loan of about $20,000,000.00.

WHY SUCH A HURRY?

After thirty years, so reads the dispatches, many of those who volunteered with Walter Reed in his fight on Yellow Fever, have received "splendid" recognition from Congress. Some of these are described "they consist of a gold medal with the name of the recipient on one side" and the words "Conquest of Yellow Fever" on the back. Congress also awarded some of the volunteers a pension of $125.00 a month. The writer saw, not long ago, the Congressional Medal of Honor bestowed upon a worthy man after a lapse of twenty-five years. Judging from these awards to those who either died or endangered their lives in the fight on Yellow Fever, Congress intends to do something about it. All of these facts have been known to the scientific world almost since their occurrence. Monuments, hospitals and other matters have been long since erected to the memory of Reed and others, but no doubt Congress wishes to be sure about the matter before taking any action.

TO SOCIETY OFFICERS AND ALL MEMBERS

It becomes our duty to annually advise that all memberships expire on December 31, 1931, and that it becomes *your* duty to hunt up your Secretary, unless you pay him sufficient salary to have him hunt you up and pay your dues immediately, or at least before January 25, 1931. Notice will be sent to every County Secretary; at the last moment a list of the delinquent members will be mailed and the delinquents will be advised personally by card. But that is going to a great deal of unnecessary trouble. We know you are going to pay your dues anyway, so why not help us out by doing so at once.

Pay through your Secretary, pay by check, so that if it is lost, or any dispute occurs over it, the records and responsibility may be fixed and mistakes corrected.

Editorial Notes—Personal and General

DR. AND MRS. FELIX ADAMS, Vinita, spent a week in October, visiting in Missouri.

DR. B. H. WATKINS, Hobart, attended the Surgical Clinics in St. Louis, in October.

DR. AND MRS. A. B. CHASE, Oklahoma City, spent part of October, visiting in Arkansas.

DR. J. R. HINSHAW, Clinton, attended the World Medical Conference in Milwaukee in October.

DR. T. R. PRESTON, Weleetka, who was injured in an automobile accident recently is reported much better.

DOCTOR C. A. THOMPSON, Muskogee, who underwent a slight operation in Muskogee has made a nice recovery.

DR. DAN L. PERRY, Cushing, has returned from Pennsylvania and New York, where he took special courses in post-graduate work.

ALVA is going through the throes of erecting a City Hospital, and of course, are having the usual trouble in the Council as to who shall construct the various parts of the building.

DOCTORS SHADE D. NEELY, N. R. Holcombe, F. W. Ewing, Muskogee; T. A. Hartgraves, Marque Nelson, Tulsa; H. C. Weber, Bartlesville, attended the Kansas City Fall Clinical Society in October.

THE TULSA ACADEMY of Ophthalmology and Oto-Laryngology met in the assembly room of the Medical Arts Bldg., November 16, 1931, 8 p. m. Dr. Roy Dunlap was elected president and Dr. Marvin D. Henley, secretary and treasurer for the coming year. This organization has been active for the past ten years.

THE EXTENSION DEPARTMENT of the University of Oklahoma, Norman, Oklahoma, began its post-graduate course at Bartlesville, November 16th; at Okmulgee, November 17th; at Tulsa, November 18th. The subject was Traumatic and Orthopedic Surgery with Fracture Clinics, and were in charge of Doctor C. B. Francisco, Kansas City, Missouri. Others connected with the Clinic were Doctors F. D. Dickson, W. B. Carrell and H. Winnett Orr.

DALLAS SOUTHERN CLINICAL SOCIETY NEWS

Throughout the past several months, the various branches of the program committee have been diligently working on the plans and details of the program for the 4th Annual Spring Conference of the Dallas Southern Clinical Society, which meets in Dallas, March 28th to April 2nd, 1932, inclusive. A most elaborate program has been planned, and except for a few of the details, the entire program is about ready to go to press. We can truthfully say that this is the best coordinated, and most thoroughly balanced program that has ever been offered to the Medical Profession of the Southwest. Many elaborate features are planned. Twenty distinguished guest speakers, men of outstanding ability as teachers throughout the United States, have already accepted our invitation to appear in general assemblies, hospital clinics, and the popular round table luncheons. Every field of medicine is thoroughly and adequately covered, and covered in such a coordinated way that the doctor who attends will be able to arrange a course of post-graduate study far superior to any that he could obtain by making trips all over the country. The evening's entertainment throughout the Clinical Conference offers many outstanding features. On Monday evening, Dr. Edward H. Cary, President of the American Medical Association, will make the welcome address before a general assembly which will be open to the public. Dr. Thos. R. Brown, Professor of Gastro-enterology at John Hopkins University, will speak on "The Story of Digestion—Indigestion." Dr. Frank L. Lahey of Boston, will talk on "The Thyroid Gland." Dr. Jos. Collins of New York will talk on "How Can We Stem the Rising Tide of Insanity in this Country."

On Tuesday evening, there will be a symposium on "Diseases of the Biliary Tract," by Dr. Thos. McCrae, of Philadelphia, Dr. J. Shelton Horsley, Sr., of Richmond, Va., and Dr. Merrill C. Sosman, of Boston. On Wednesday evening a brilliant clinic dinner will be held, and many special features of entertainment are being arranged.

On Thursday evening two symposia will be held, one on "Arthritis," featuring Dr. John A. Kolmer, of Philadelphia, and one on "Conservation of Maternal Health," featuring Dr. Edward H. Richardson, of Baltimore.

The Clinical Society is continuing its ninety-six full one hour periods of post-graduate work, and is arranging this part of the program in such a manner as to prevent, as near as possible, conflicts between Medical and Surgical topics.

The popular Round Table Luncheons are to be held on five days, and are to meet in the following groups: Medicine, Surgery, Pediatrics, Eye, Ear, Nose and Throat, Urology, and Orthopedics.

Another special feature has been added this year in the form of Hospital Ward Rounds and Surgical Operative Clinics. These features will be conducted by local members of the Dallas Southern Clinical Society on Friday afternoon and Saturday morning.

The "Prospectus" will be ready for mailing about January 1st, and the complete program will be mailed to all the doctors of the Southwest about March 1st, 1932. Truly the Dallas Southern Clinical Society is offering the most elaborate program of post-graduate study that has ever been made available to the doctors of the Southwest. The registration fee, which covers everything, remains at the usual price of $10.00. A number of registrations have already been received, and the various committees are confident of an attendance of at least two thousand next spring.

A cordial invitation is extended to every doc-

tor, and a hearty welcome is awaiting you. "Don't miss this Conference."

G. F. GOFF, M.D.
Chairman Publicity Committee.

OKLAHOMA CITY ANNUAL FALL CLINIC

Among those attending the Annual Fall Clinics, held at Oklahoma City in November, were the following:

Aderhold, T. M., El Reno, Okla.
Alexander, C. J., Clinton Okla.
Allgood, J. M. Gould, Okla.
Anderson, J. V., Fairview, Okla.
Anderson, P. H., Anadarko, Okla.
Angus, H. A., Lawton, Okla.
Antle, H. C., Chickasha, Okla.
Baker, F. P. Talihina, Okla.
Bates, C. A., Lake City, Ark.
Barker, C. B. Guthrie, Okla.
Barker, Pauline, Guthrie, Okla.
Baker, G. W., Walters, Okla.
Bates, C. A., Lake City, Ark.
Beck, Joseph C. Chicago, Ill.
Billingsley, C. B., Ft. Smith, Ark.
Bloss, C. M., Okemah, Okla.
Blake, C. D., Hayes, Kans.
Board, J. W., Clovis, N. Mex.
Bollinger, D. W. Henryetta, Okla
Breco, Davis, Ada, Okla.
Breco, Jos. G., Ada, Okla.
Budd, G. J. Perryton, Tex.
Butler, O. C., Seminole, Okla.
Butler, W. L., Stafford, Kans.
Byrum, J. M., Shawnee, Okla.
Carlisle, Geo. H., Dallas, Tex.
Caldwell, A. G., Canadian, Tex.
Calloway, John, Pauls Valley, Okla.
Campbell, J. F., Mangum, Okla.
Carson, F. L., Shawnee, Okla.
Carson, Paul C., Wichita, Kans.
Chalmers, J. S., Sand Springs, Okla.
Chandler, H. E., Mt. Vernon, Tex.
Clandley, H. E., Mt. Vernon, Tex.
Clements, O E., Gainesville, Tex.
Cochems, F. N., Salida, Colo.
Cochran, C. M., Okemah, Okla.
Cochran, Roy L., Caddo, Okla.
Connell, D. V., Norman, Okla.
Connor, Edwin E. Erick, Okla.
Cooley, Ben H., Norman, Okla.
Cornet, P. T., Jr., Albuquerque, N. Mex.
Corrigan, R. W., Dallas, Tex.
Craig, H F., Protection, Kans.
Crossen, H. S., St. Louis, Mo.
Croston, G. C., Sapulpa, Okla.
Cummings, I. L., Ada, Okla.
Cox, J. L., Ardmore, Okla.
Davis, John, Seminole, Okla.
Davis, Benjamin, Cushing, Okla.
Davis, G. C., Wichita, Kans.
Dawson, O. O., Wayne, Okla.
Dever, H. K., El Reno, Okla.
Disenhof, F. J., Chicago, Ill.
Doler, C., Clinton, Okla.
Donald., Homer, Dallas, Tex.
Dorwart, F. G., Muskogee, Okla.
Dozier, B. E., Webb City, Okla.
Duffy, F. M., Enid, Okla.
Dunlap, E. B., Lawton, Okla.
Flesher, Thomas H., Edmond, Okla.
Emanuel, Roy E., Chickasha, Okla.
Ellerts, W. J., Wichita, Kans.
Epler, Crum, Pueblo, Colo.
Etter, Forrest S., Bartlesville, Okla.
Farley, John Baron, Pueblo, Colo.
Ferguson, L. W., Lawton, Okla.
Fisher, Roy, Frederick, Okla.
Finley, H. W., McLean, Tex.
Fite, Pat Muskogee, Okla.
Flack, Frank L., Tulsa, Okla.
Floyd, W. E., Holdenville, Okla.
Fox, Howard, New York City
Franklin, O., Broken Arrow, Okla.
Gable, J. J., Norman, Okla.
Gallaher, W. M., Shawnee, Okla.
Gastin, Jno. L., Shawnee, Okla.
Gibson, John Paul, Lawton, Colo.
Gibson, R B., Ponca City, Okla.
Gillespie, C. P., Geary, Okla.
Gooch, E. S., Lawton, Okla.
Goodrich, E. E., Crescent, Okla.
Goodsheller, G. J., Marion, Kans.
Gordon, Douglas M., Ponca City, Okla.
Gordon, E. S., Dallas, Tex.
Griffin, D. W., Norman, Okla.
Guild, C. H., Shidler, Okla.
Hahn, L. A., Guthrie, Okla.
Hammond, I. W., Lawton, Okla.
Hemphill, Paul H., Pawhuska, Okla.
Hendrick, J. W., Amarillo, Tex.
Hancks, J. A., Wamego, Kans.
Hart, E. E., Canton, Okla.
Haynie, John A., Durant, Okla.
Herrick, James B., Chicago, Ill.
Heymann, J. A., Wichita Falls, Tex.
Hicks, C. A., Wetumka, Okla.
Hickman, R. L., Clinton, Okla.
Hill, C. B., Guthrie, Okla.
Hill, H. K., Follett, Tex.
Hix, J. B., Altus, Okla.
Hixson, J. S., San Angelo, Tex.
Hodgson, C. M., Kingfisher, Okla.
Hollis, J. B., Mangum, Okla.
Hood, Robt., Russellville, Ark.
Howell, C. H., Meeker, Okla.
Howell, O. E., Washington, Okla.
Hubbard, T. P., Edmond, Okla.
Hudson, F. H., Enid, Okla.
Huston, H. E., Cherokee, Okla.
Hughes, Horton E., Shawnee, Okla.
Humphries, F. C., Evansville, Ind.
Hurlbut, E. F., Meeker, Okla.
Hutchins, C. M., New York City
Johnston, R. E., Bridgeport, Okla.
Jackson, Edward, Denver, Colo.
Jane, James O., Chicago, Ill.
Jones, James O., Chicago, Ill.
Judd, E. S., Rochester, Minn.
Kassebaum, G. E., Eldorado, Kans.
Keene, L. M., Pawnee, Okla.
Kerley, W. W., Anadarko, Okla.
Kern, Richard, Philadelphia, Pa.
Kill, O. B., Wichita Falls Tex.
King, A. T., Ft. Sill, Okla.
Kimbrough, O. T., Wichita Falls, Tex.
Kniseley, H. B., Norman, Okla.
Krock, Fred, Ft. Smith, Ark.
Krueger, J. T., Lubbock, Tex.
Lamb, Ellis, Clinton, Okla.
Lancaster, W. M., Clovis, N. Mex.
Lassiter, E. T., Albuquerque, N. M.
LeHew, J. Leslie Jr., Guthrie, Okla.
Leeds, Alexander B., Chickasha, Okla.
Leslie, S. B., Okmulgee, Okla.
Levick, J. E., Carter, Okla.
Lewis, M. L., Ada, Okla.
Lhevine, Morris, Tulsa, Okla.
Little, Jesse S., Minco, Okla.
Lindsey, R. H., Pauls Valley, Okla.
Lipe, E. N., Fairfax, Okla.
Livermore, W. H., Chickasha, Okla.
Lloyd, H. C., Hobart, Okla.
Marris, S. V., Chickasha, Okla.
Marchman, Oscar M., Dallas, Tex.
Marrs, S. O., Chickasha, Okla.
Martin, M. L., Denton, Tex.
Mason, W. J., Lawton, Okla.
Mathews, G. F., Britton, Okla.
Maxwell, C. L., Myra, Tex.
Mayfield, W. T., Norman, Okla.
Melencamp, N. E., Dodge City, Kans.
Merritt, Ina Stevens, Norman, Okla.
Mock, L. E., St. John, Kans.
Moore, R. W. Eureka, Okla.
Morris, Ernest H., Canadian, Tex.
Murphy, H. A., El Dorado, Ark.
MacLeod, D. R., Hooker, Okla.
McBridge, J. S., Lyons, Kans.
McBurney, C. H., Clinton, Okla.
McCrae, Thomas, Philadelphia, Pa.
McCroshel, M. R., Fairview, Okla.
McCarley, T. H., McAlester, Okla.
McGregor, Frank J., Mangum, Okla.
McGuire, Joseph H., Dallas, Tex.
McKellar, Malcolm, Tulsa, Okla.
Neel, W. H., Wellington, Kans.
Neely, S. D., Muskogee, Okla.
Nelson, I. A., Tulsa, Okla.
Nelson, Ira D. Claremore, Okla.
Nichols, B. H., Cleveland, Ohio
Owens, M. J., Kansas City, Mo.
Parker, O. T., Salida, Colo.
Parmley, T. H., Electra, Tex.
Patterson, Fred L., Woodward, Okla.
Patterson, Jas. L., Duncan, Okla.
Payne, W. E., Slaton, Tex.

Petty, C. S., Guthrie, Okla.
Phelps, Joseph T. El Reno, Okla.
Points, Blair, Luther, Okla.
Powers, Evelyn Gass, Amarillo, Tex.
Ramey, W. G., Protection, Kans.
Ramsey, W. G., Quinton, Okla.
Ray, W. T. Gould, Okla.
Renegar, J. F., Tuttle, Okla.
Renfrow, T. F., Billings, Okla.
Roddy, Louis H., Waco, Tex.
Rollins, J. S., Prague, Okla.
Royse, Geo. T., Amarillo, Tex.
Ruhl, N. E., Weatherford, Okla.
Salmon, W. T., Duncan, Okla.
Sanders, T. C. Shawnee, Okla.
Sarchet, L. H., Wellington, Kans.
Schoor, W. F., Hutchinson, Kans.
Schmidt, Eleanora, Norman, Okla.
Scism, Mollie F., Walters, Okla.
Seay, Ders E., Dallas, Tex.
Seba, W. E. Leedy, Okla.
Siegel, G. R., Clarksville, Ark.
Shepard, R. M., Tulsa, Okla.
Shipply, Wm. L., Wister, Okla.
Shipman, W. H., Bartlesville, Okla.
Shudde, W. J., Amarillo, Tex.
Siegel, G. S., Clarksville, Ark.
Silverthorne, C. R., Woodward, Okla.
Smith, M. A. V. Chilocco, Okla.
Snedec, J. F., Pueblo, Colo.
Spalding, Ben. Arkansas City, Kans.
Spearing, Jos. W., Cimarron, Kans.
Speed, H. K., Sayre, Okla.
Spickard, L. J., Okemah Okla.
Steindler, Arthur, Iowa City, Iowa
Stites, Hugh, Aledo, Ill.
Stoddard, T. A., Pueblo, Colo.
Stone, S. N. Edmond, Okla.
Stoner, R. W., Ardmore, Okla.
Sugg, A. R., Ada, Okla.
Sullivan, C. B. Colony, Okla.
Swope, Opie W., Wichita, Kans.
Taylor, E. F., Mayville, Okla.
Taylor, H. R., Concho, Okla.
Templin, Dr., Alva, Okla.
Thackel, Robert E., Lexington, Okla.
Tisdal, V. C., Elk City, Okla.
Tittle, Lloyd C., Dallas, Tex.
Trainor, W. J., Tulsa, Okla.
Tucker, I. N., Tulsa, Okla.
Underwood, David J. Tulsa, Okla.
Van Sandt, Guy B., Wewoka, Okla.
Vogt, William H., St. Louis, Mo.
Voth, D. A., Chicago, Ill.
Walker, Roscoe, Pawhuska, Okla.
Wallace, F. E., Chase, Kans.
Walsh, Joe, St. Louis, Mo.
Welch, C. W., St. Louis, Mo.
Woods, L. E., Chickasha, Okla.
Wharton, John T. Durant, Okla.
Wickham, M. M., Norman, Okla.
Wiley, G. W., Norman, Okla.
White, J. Hutchings, Muskogee, Okla.
Williams, C. E., Woodward, Okla.
Williams, Gordon Weatherford, Okla.
Williamson, A. R., Pueblo, Colo.
Willour, L. S., McAlester, Okla.
Wolff, E. J., Waukomis, Okla.
Wolff, L. G., Okarche, Okla.
Woods, L. E., Chickasha, Okla.
Woods, Ozro T., Dallas, Tex.
Worten, Divonis, Pawhuska, Okla.
Zeigel, Henry H., Collbran, Colo.

MRS. ETTA J. WEBER

Mrs. Etta J. Weber, Bartlesville, mother of our President, Doctor Henry C. Weber, and widow of the late Doctor Howard C. Weber, died November 10, 1931, after an illness of more than a year. Mrs. Weber was a widow of one of the most successful and early pioneers in the oil development of Oklahoma; Doctor Weber probably drilled the earliest large well in the State.

Mrs. Weber was born in Depseytown, Pa., July 13, 1863; she moved with her family to Bartlesville, in 1904, where she busied herself raising a family consisting of a daughter, Savilla Raymond, Doctors H. C. and Sherwell G. Weber of Bartlesville, and Mark Weber of Denver. Aside from the activities of rearing a family Mrs. Weber was prominent in the community and civic activities. She was active in the O. E. S., at all times busy in the work of the First Methodist Church and taking great interest in the affairs of the American Legion Auxiliary.

The Journal takes this occasion to extend its regrets to the bereaved family.

DR. WALTER CLAUDIUS BRADFORD
1878—1931.

Walter C. Bradford was born May 8, 1878, in Council Grove, Kansas, and moved to Oklahoma City in 1889, with his parents. He graduated from High School in Oklahoma City, and from the Kansas City Medical College. He practiced medicine in Shawnee, Oklahoma, from the year 1904, until his death. He became the Secretary of the Pottawatomie County Medical Society in the year of its origin, 1905, and continued in that office for several years. He was elected President of that body in 1912, and again in 1921. He was selected as Councellor of this Medical District in 1911, and held that position until 1927. He was President of the Oklahoma State Medical Association in 1910. He was a member of all Masonic bodies in Shawnee, of the Consistory at McAlester, and of the Shrine in Oklahoma City. He was an active member of the First Methodist Church, of Shawnee. On October 2, 1900, he was married to Miss Ida Dodge; and of this union there were born three sons. He passed this life the morning of November 24, 1931.

The lives of men are known for two things, "Their religious faith, and what they have done." The circumstances of life often mar the deeds of men so the appearance of their faith is not so well seen of men, and it often takes a close personal friendship to determine the quality of the faith of our friends.

We wish this day to commemorate W. C. Bradford, M.D., in the light of this short summary above given. Those of us who have had close personal contact with him will agree in this that we are about to say.

The medical savant is apt to be looked on as a man who is a mere mechanical adjunct of healing to a social structure, and thought of to have very little of the human in him, yet more often than not he is the rarest of the human species both in humanity and human friendship.

We like to now remember W. C. Bradford in this rarest of human parts, a very human man and a friend. There was in him when

at his best that human man to man friendship, which made him approachable to all his friends. His humanity and friendship were of the kind that staid firmly all through the trials to the last. We respect his memory this way in this last homage we pay him, forget his faults.

In social morals, he was of the fine high type of which chivalrous gentlemen are made. He failed to see moral deflection of social life in others. His own character thus because of its high standards being blind to the deflections of others. His conversation was always chaste, filled only with the reflection of his own socially moral chastity.

The hurt of his own personal manners was to himself and none other. The circumstances of his own suffering we do not so much know, and if we did know them we would think with gentler compassion on his personal eccentricities which hurt him alone.

His medical work is here as a record with the triumphs and struggles that mark every man in this profession. He went fearlessly against the heavy odds, that every man of the profession must meet and left a record here with us by which we may profit. When a man faces the heavy odds of this work he must in every case bow at last to a beneficent Providence and a kindly nurse in nature for the final analysis of the struggle and the odds against the Doctor. Dr. Bradford did and has done so, and in the realm where he now is, he may learn a new "Materia Medica," not of bodies, but perhaps of minds and spirits.

We could not think this memorial complete without a mention of the religious attitude of our friend. This attitude surfaced itself in the membership with the First M. E. Church, North, but the surface only marks the inner heart of which the outward church membership and loyalty to that are mere signs and symbols. W. C. Bradford by those outward signs and symbols and his chaste conversation and high social morals gave us plenty of evidence of his inner abiding faith in God and the atoning grace of God's plan to redeem men. Religion is never completely measured by single acts and deeds of men, but by the steady flow of life toward a consummate of its function when we measure him this way we find purity of faith and purpose.

It looks like with all our boasted healing skill that death is sure and we all have to go that way and when W. C. Bradford forgot to wake the other morning it is just a gentle reminder that we all must come not to that as an end, but as a transition to that better thing to which he has attained. We call it death, he knows better, he is on the other side.

Let me close this by quotation of the Elder Cyrus in talking with his son at the time of Cyrus' death, "I would not have you to forget, my son, that my soul goes not in oblivion, although you cannot see it. You could not see it while I lived, but you knew it was with me because of the things it did, and because it worked while my body lived, makes it clearer that it will work more fully when it is not handicapped by the frailties of this feeble body of mine. So you may think of me then as alive and working in Soul after my earthly dissolution." "Cyrus the Great."

We like to honor our friend in this way for after all is said and done these questions come to us and will not be put down.

J. A. WALKER, M.D.,
Chairman the Committee,

JOHN I. GASTON, M.D.,
President the Society,

F. C. GALLAHER, M.D.,
Secretary-Treasurer.

JAMES D. SCOTT, M.D.

Dr. James D. Scott, pioneer physician of Holdenville, died at Holdenville in November, after an illness of several months.

Doctor Scott was born in Pike County, Illinois, May 23, 1872. After completing his high school education there, he attended Eureka College in Chicago for two years, after which he began his medical course in St. Louis, Missouri. He later took a post-graduate's course and then came to Indian Territory, where he settled in Holdenville. He began his practice here in June, 1901. He practiced medicine continuously since that time until the past year when he retired from active practice because of ill health. He married Miss Pauline Lowell in 1910.

He was a charter member of the First Christian Church of Holdenville and a prominent member of the Modern Woodmen and Knights of Pythias.

Funeral services were conducted by Rev. Geo. P. Rossman, of the First Christian Church. He is survived by one daughter, Mrs. Jane Vannoy, and one son, Jimmie Scott.

RESOLUTION

We bow with submission to the rules and edicts nature has decreed on the physical being of the human family. While we bow in submission our hearts are made sad at the removal by death of our friend and member Dr. J. D. Scott, and most fraternally resolve that our hearts go out in tender sympathy to the grief stricken family in this, their hour of sorrow, and

We do further resolve that we feel and realize that in the death of our member,

Dr. Scott, we have lost a friend of christain integrity and fidelity to principle.

Resolved further that a copy of this resolution be read at the meeting of the society in December, a copy be given the family, one to the Journal and one to each of the local newspapers at Holdenville for publication.

Committee,

T. B. FELIX,
W. E. FLOYD,
D. Y. McCARY.

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from LeRoy Long Clinic
714 Medical Arts Bldg., Oklahoma City

Crile, George W.: Anesthesia. The American Journal of Surgery. Volume 15, No. 1, Page 288.

The author points out that regardless of the question as to whom the honor for the introduction of anesthesia should go, "The fact remains that with the fourth decade of the nineteenth century began a new era in surgery, paralleled only by the aseptic era initiated by the work of Pasteur and Lister."

Reference is made to the introduction of cocaine by Koller in 1844, of novocain by Braun in 1905, of the combination of oxygen and nitrous oxide by Andrews in 1868, the introduction of the hypodermic syringe by Alexander Wood in 1853, and the work of Matas in developing the use of local and regional anesthesia in general surgery.

Regarding methods, the statement is made that the trend in general is away from "The harmful, deep inhalation anesthesia toward lighter, less harmful anesthesia, analgesia and regional and spinal anesthesia." In this connection, the author refers to experiments which showed that shock did not follow trauma in territories where the nerve supply had been blocked. He speaks of the value of morphine and of sharp dissection in surgical operations, pointing out that his method of anoci association "is accomplished by such a combination of anesthetics, narcotics, environmental management and surgical technique as is suited to the individual case."

Of the anesthetic agents given by inhalation, nitrous oxide plus oxygen is preferred, but even this should rarely be carried to a point beyond analgesia. This is particularly true in bad risk cases, for "The more serious the risk, the less the amount of inhalation anesthetic that should be administered," because it interferes with the internal respiration, especially the internal respiration of the liver, the myocardium and the brain."

The value of regional anesthesia for operations on the head, the neck, the thorax and the upper extremities is indicated, attention being called to the fact that a thorough knowledge of anatomy is essential for its successful application. In these and other situations it may be advisable to combine regional block with nitrous oxide analgesia. There is a caution in connection with regional anesthesia in patients with cardiac disease or impaired renal function.

Spinal anesthesia is recommended as being of especial value in bad risk cases, in lower extremity and lower abdominal operations, but the author quickly follows with the statement: "Spinal anesthesia is not free from danger since it encroaches upon vital functions. It should always be used by experienced operators; the Trendelenburg position must always be employed; the blood pressure must always be controlled." In view of the apparent tendency to disregard the effect upon arterial tension, the following statement by the author is strikingly significant and important: "The greatest menace of spiral anesthesia is the lowered blood pressure. To obviate this danger, ephedrine in 1 grain dosage is given before the injection of the spinocain and if necessary the dose is repeated during and even after the operation."

The article is concluded by calling attention to the usefulness of morphine, combined with scapolamine or atropine at least an hour before the operation, except in the aged, the very young and those profoundly feeble.

—LeRoy Long.

Jones, David T.: The Diagnosis and Principles of Treatment of Carcinoma of the Colon and Rectum, Annals of Surgery, November, 1931, Vol. XCIV, pages 860-870.

Many of the classical symptoms of large bowel malignancy, such as ribbon stool, constipation, loss of weight and pain, are of little value in making an early diagnosis. An early diagnosis is essential in order to achieve a successful result by any operative procedure. "If it could be taught that any change in bowel habit or sensation or bleeding from the rectum is suggestive of malignant disease of the colon or rectum, it would not be necessary to burden physicians or students any further. The often repeated caution to beware of complacently assigning piles as cause of bleeding is forcibly stated. He says: "If carcinoma of the rectum is suspected the diagnosis can be made in 100% of the cases presenting themselves, by digital or sigmoidoscopic examination." He feels that X-ray is less reliable and should not be used until after the above examinations have been done by a competent man. Some possible sources of error on the sigmoidoscopic are pointed out.

A plea is made for a thorough operation in which the growth is removed with a wide margin at either side and the area of lymphatic drainage removed when possible. The combined abdominoperineal operation is the method of choice. The Mikulicz procedure is frequently not applicable because it does not permit removal of enough bowel and mesentery. The sphincter should be removed and a colostomy made. The prevalent inadequate or local operation is probably due to the abhorrence of patient and surgeon for a colostomy when the growth has not been completely removed. Jones feels that his patients who have had complete removal of the growth after colostomy do not have this feeling of abhorrence for the colostomy, and, when properly instructed in care of the colostomy, usually lead happy and useful lives.

Although standardization of technique in resections of the colon seems impossible, he feels that two fundamental principles can be agreed upon.

1. An adquate blood supply is neceessary. "The best suture material and the best suture known, the most carefully done anastomosis or an aseptic anastomosis are of no value if the blood supply is deficient."

2. The line of sutures must be relieved of intra-intestinal pressure. The surest way to prevent pressure on the line of suture in the left colon is to make a colostomy a short distance above the anastomosis. However, a cecostomy is effective and has the advantages of not interfering with the field of operation and not requiring a secondary operation for closure. It also is sufficiently effective as a means of emptying the bowel before operation.

So much stress has been laid upon the aseptic method of anastomosis by some authors that the two most important factors in good results, blood supply and the absence of pressure on the line of sutures, have been overlooked.

—LeRoy Long.

Kreiselman, Joseph: Avertin Anesthesia from the Anesthetist's Standpoint; A Resume of 18 Months Experience, Annals of Surgery, November, 1931, Vol. XCIV., Page 885.

The author's experience with this form of anesthesia has consisted in 1500 cases. He feels that it is a basal anesthesia. For this reason a trained anesthetist should be in charge of the patient. The choice of the supplemental anesthetic (ether, nitrous oxide, oxygen or ethylene) should be left to him.

He outlines the proper method of preparing the solution before rectal administration, and explains the way in which correct dosage is estimated. His dosage has varied from 60 mg. to 120 mg. per kilo of body weight.

He feels that avertin has filled a great void in pediatric surgery. It is particularly suitable in operations upon the larynx, cauterization of the tongue, thyroid surgery, where it is necessary to operate during acute alcoholism and when a general anesthetic is distasteful to the patient.

The contra-indications are given as follows:

1. Diseases of the liver and kidneys.
2. Advanced tuberculosis.
3. Extreme cachexia.
4. Acidosis.
5. Use with care when elimination is delayed and in debilitated and dehydrated elderly patients, and in the obese.
6. Ulcerative diseases of rectum or colon.

He thinks that the many asphyxias, many irritated colons, and several deaths reported from Germany were due to the high dosage, overheated solutions and absence of trained anesthetists and nurses.

Comment: During the past year we have been delighted with avertin anesthesia in several very toxic goiter cases upon whom we have operated. We have not observed any unpleasant complications. We believe, however, that it is impossible to place too much emphasis upon the precautions necessary, particularly in preparation of the solution and in careful maintenance of a clear airway after the operation.

—LeRoy Long.

Ward, George Gray and Farrar, Lilian K. P.: Reradiations in the Radium Therapy of Carcinoma of the Cervix Uteri. American Journal of Obstetrics and Gynecology, October, 1931, Volume XXII, Page 543.

The authors outline the prevailing views upon repeated radiations over long periods of time in the treatment of carcinoma of the cervix. They also review the method used in the Woman's Hospital and the character of their "follow up." In analyzing 170 cases of carcinoma of the cervix they found that nearly fifty percent of the patients had more than one radium treatment and twenty-six and five-tenths percent of these patients that were re-radiated lived five years or more.

This demonstrates that "reradiation in carcinoma of the cervix is of definite value in local metastases." They speak with emphasis about the uselessness of depending upon subjective symptoms for early recognition of recurrences and they feel that their good results depend wholly upon frequent examinations at regular intervals by the surgeon who applied the radium. Only in this way do they feel that early recognition and successful re-radiation can be accomplished.

—Wendell Long.

Lynch, Frank W.: A Five to Fifteen Year Follow-up Study of One Hundred Ninety-two Cervical Cancers. American Journal of Obstetrics and Gynecology, October, 1931, Vol. XXII, Page 550.

This autor reviews 192 patients with a total five year cure in all cases seen of 19.3 percent. He includes 43 cases that had been operated elsewhere and were admitted with recurrences. His proportion of early cases is large.

Interesting comments are made concerning the choice and method of therapy. In a small percentage of cases, operation and radium were used, but in most radium alone was employed.

—Wendell Long.

Crossen, H. S.: Conclusions From a Study of Five-year Cures in a Series of 121 Cases of Carcinoma of the Cervix Uteri. American Journal of Obstetrics and Gynecology, October, 1931, Volunme XXII, Page 559.

This author reviews the five year results of 121 cases of carcinoma of the cervix and gives at some length his conclusions on effective treatment of this disease at the end of ten years experience with radiation therapy. The three patients in groups 1 and 2 (early carcinoma) all survived, but the most significant fact is that of the large group of 108 with extensive para-metrial involvement with fixation of the uterus, 21 percent were cured. He points out that the "cell type" apparently does not have a great influence upon the survival of the patient, certainly very little compared to the clinical classification as to extent of growth.

His conclusions at the end of 10 years experience with radiation therapy concern:

1. The treatment for very early cases wherein he considers at some length the choice of operation, and radiation, or radiation alone.

2. The essentials of effective radium treatment in which he emphasizes: a. Careful study of special conditions present in each case. b. The giving of the maximum dose at the first application. c. Supplementary deep X-ray therapy. d. Careful follow-up of cases and treatment of any local spots of recurrence.

3. Prophylaxis of carcinoma of the cervix. He reiterates that, "The time to cure cancer with the greatest certainty is before it starts." "Great pains are taken, in cases of chronic cervicitis, to detect the first signs of cancer, so that treatment for cancer may be promptly instituted; whereas a safer plan is to remove the chronic cervicitis promptly before it becomes cancer."

He points out that chronic cervicitis may be cured by simple conical excision of the affected area of the cervix and thus cancer is prevented.

Comment: One cannot emphasize too strongly these closing statements of Dr. Crossen's article in which he reviews the tremendous inportance of prevention of carcinoma as a means of combating the inroads of this disease.

—Wendell Long.

DERMATOLOGY AND SYPHILOLOGY

Edited by James Stevenson, M.D.
615 Medical Arts Building, Tulsa

Sensitizations. Regional, Seasonal, Dietary and Other Influences Accounting for Variations and Fluctuations. Sulzberger, Marion B., and Mayer, R. L., Arch. Dermat. and Syph., 24:537 (October), 1931.

The authors comment on the frequent inability of research workers to verify one another's results, result in confusion and disputes. They performed experiments on guinea-pigs, identical in every way, sensitizing the animals to one brand of neo-arsphenamine by intradermal injections. These experiments were done in Breslau, Zurich, and New York City, and whereas in Breslau 98 per cent of the animals became skin sensitive to neo-arsphenamine, and fifty per cent in Zurich, none became hypersensitive in New York City. The influence of diet is apparently an important factor, for those animals fed green summer (alkaline ash) fodder were notably less sensitive to not only neo-arpshenmine, but paraphenylendiamine as well, than those fed dry (winter) fodder. Other factors causing widely varying experimental results obtained in the study of hyper-sensitiveness and allergy are mentioned in the article, and the impression is left that we still have much to learn about these subjects.

Jugular Compression. An Adjunct in the Treatment of Syphilis of the Central Nervous System. Smith, Dudley C., and Waddell, J. A. Arch. Dermat. and Syph. 24:727 (November), 1931.

The Hemato-encephalic barrier prevents the ordinary anti-syphilitic remedies in use from penetrating into nerve tissue and the spinal fluid in appreciable concentration. Suggested explanations of this barrier are: (1) the atypical vascular distribution and the brain and the absence of lymphatics, (2) the inelasticity of the covering of the brain and the spinal cord, (3) the selective secretory (or dialyzing) action of the choroid plexus.

Jugular compression promptly increases the intracranial pressure and the rate of flow of spinal fluid, and the authors' experiments were based on the hope that the passive hyperemia produced could cause a pouring forth of arsphenamized antisyphilitic serum into the ventricles, the subdural spaces and the parenchyma. The appliance used consisted of two leather pads attached to a woven strap which had an adjustable buckle. This was fastened about the neck with sufficient compression to cause engorgement of the veins of the face, but not to affect the pulsation of the temporal arteries; and left in place for thirty minutes following the intravenous injection of arsphenamine. Spinal fluid was then removed and tested quantitatively for arsenic by the Gutzeit method. In twenty-two control cases the average spinal fluid arsenic content was .002 mg. per five cubic centimeters, while in the eighteen cases in which jugular compression was used, the arsenic content averaged .0031 mg. per five cubic centimeters. It is suggested, therefore, that jugular compression may prove a useful adjunct in treatment in selected cases of neuro-syphilis.

Lupus Erythematosis Disseminatus. Mook, W. H., Weiss, R. S., and Bronberg, Leon K. Arch. Dermat. and Syph. 24:786 (November), 1931.

This article does not lend itself readily to abstraction consisting as it does of the detailed report of thirteen cases of disseminated Lupus, with nine deaths, and four autopsies. In ten of these cases marked involvement of the serous membranes occurred, in the form of arthralgia (serous and fibrinous arthritis?), pleurisy, pericarditis, localized peritonitis. Leucopenia is stressed as an important diagnostic symptom. Excellent photographs show the skin manifestations, three of the cases being of the Senear-Usher type.

The authors discuss the old question the etiologic relationship of this disease to tuberculosis, and agree with MacLeod that disseminated lupus erythematosis is a toxic or a septic cutaneous symptom, probably not tuberculous.

A Study of The Blood Picture in Congenital Syphilis and The Effect of Anti-Syphilitic Therapy upon the Hemoglobin and Cellular Elements. Pearlman, H. H., and Wright, C. S. Am. J. of Syph., 15:499 (October), 1931.

A study was made of the blood pictures in a number of congenital syphilitics treated with arsenicals, with bismuth, or with both. The authors believe that the secondary anemia present in congenital syphilis is like all anemias associated with chronic infectious disease, and that the degree of anemia may be no more and no different from that found in supposedly healthy children. No reliance can be placed upon the degree of anemia, nor does the study of individual cells reveal anything of diagnostic or prognostic importance. In previous studies mercury had been proven to be a hemolytic agent, but the effect of

arsenic and bismuth or a combination of the two on the secondary anemia and upon the differential count was variable and inconsistent and no definite conclusions were drawn.

TUBERCULOSIS

Edited By
L. J. Moorman, M.D.
304 Osler Bldg., Oklahoma City

Studies on the Incidence of Tuberculous Infection. Elizabeth A. Leggett and F. F. Callhan. The American Review of Tuberculosis, August, 1931.

Tuberculosis surveys in the schools are useful not only as a means of statistical studies of the incidence of infection but also as a means of early diagnosis of unsuspected disease. This one is especially interesting since it shows that the presence of a teacher with active pulmonary tuberculosis is a definite source of infection to the children. The Minnesota groups studied in this series consist of 259 students from the St. Marks School, St. Paul; 340 students from the Lincoln and Erickson Schools and the Johnson High School, St. Paul, and 265 students from the Pine City grade and high schools. One St. Paul group came from a good and one from a poor residence district; the Pine City group lived either in the small town or in the surronding farming community. The Mantoux tuberculin test was used followed by physical and X-ray examinations on all positive reactors.

Of the 563 St. Paul children examined 131 or 23 per cent reacted positively to tuberculin. Of the 125 children X-rayed 39 or 29 percent showed evidence of pulmonary infection; there were no diagnoses or active tuberculosis in this group. In Pine City 265 were examined of whom 43 or 16 percent reacted positively. Among the grade school group 4 percent were positive as compared with 8.7 percent in St Paul. In the high school group 25 percent were positive as compared with 13.5 in St. Paul. Of the 42 X-rayed, 29 or 69 percent showed evidence of pulmonary infection and there were 3 diagnoses of active tuberculosis in this group. It was in the Pine City High School that a teacher, active in athletics, was ill with a "cold" with cough and expectoration for 2 months before being diagnosed and treated the year before this study was made. The incidence of infection in this series is less among the grade school children in Pine City than in St. Paul and much less than that of any other series except two other rural ores. However it was much higher in the Pine City High School where there was a known source of infection than in the St. Paul high school and there were no active cases among the city group while 3 were found in the much smaller Pine City High School group.

The authors also made a study of autopsy material making a careful examination of the lungs in cases of death from causes other than tuberculosis. This showed the presence of undiagnosed tuberculous lesions in 42 percent of their series.

Each method of studying the incidence of tuberculous infection has its faults—the school children being younger may show a lower incidence while those patients coming to autopsy, being usually from the poorer classes, may show a higher incidence than is true of the community as a whole.

Vitamine D in Bone Tuberculosis in Children. H. D. Grayzel, M. J. Shear and Benjamin Kremer. The American Review of Tuberculosis, August, 1931.

This study was undertaken to determine the effect of an increased intake of vitamine D on tuberculous infection of bone. Eighteen tuberculous children ranging in age from three and one-half to twelve years of age were divided into two groups, nine each—one test and one control group —17 had active bone tuberculosis, 1 had tuberculosis of the skin. All received a well-balanced diet adequate in all respects including its vitamine content. All also received daily 2 tablespoonsful of preparation of maltine and codliver oil. The treated children received in addition 4 mgm. daily of irradiated ergosterol during the first 4 months and 7 mgm. daily for the next 8 months, this being equivalent to about 0.6 to 1.0 litre of codliver oil daily. Three children of the control group and one of the tested group were allowed to be out of bed and out of doors several hours daily, the others were in beds on a porch the greater part of each day. Other treatment consisted in the various types of immobilization or rest in bed, daily salt baths and dressings, no operations were performed. During this investigation periodical physical examinations, blood-pressure readings and urine examinations were made, radiograms taken, and whenever possible monthly weigths were recorded. Blood-serum calcium and phosphorus were determined at the end of 6 and 12 months.

The study showed that the addition of irradiated ergosterol to an already adequate and well balanced diet produced no noticeable acceleration of the healing process in bone tuberculosis; also that large doses of irradiated ergosterol caused no toxic symptoms, no observable pathological calcification and no increase above the normal in concentration of serum-calcium or of serum-phosphorus.

Intrapleural Pneumolysis. Lincoln Fisher. The American Review of Tuberculosis, September, 1931.

All tuberculous complications tend to improve with the pulmonary improvement resulting from more adequate compression. Intrapleural pneumolysis is a necessary adjunct to artificial pneumothorax. The galvanocautery affords a reasonable and safe method for adhesion cutting with little danger from bleeding and cauterizations lasting as long as 2½ hours are well tolerated with little reaction. In the diffuse, multiple fold type of adhesion which is most apt to contain lung tissue or large blood vessels where complete cauterization is impossible, a partial cauterization in the form of a V notch extending towards the chest wall is very satisfactory as subsequent pneumothorax refills serve to peel the lung away from the parietal attachment and the patient thus gains the benefit of a complete collapse.

Twenty-eight and six-tenths percent of the pneumothorax patients at the Waverly Hills Sanatorium, Waverly Hills, Kentucky, since July 1930, proved suitable for cauterization. All but one has been definately benefited by intrapleural

pneumolysis and 65 percent of these cases were given a perfect collapse. All the patients have noted a marked diminution in both cough and sputum and the majority have shown a tendency for the sputum to become negative with an occasional positive test. Marked symptomatic improvement has occurred even when cavities have been only partially collapsed. Five cases developed a small postoperative effusion; one patient had fluid prior to operation which persisted afterward; in nine cases no postoperative effusion whatever developed, one case with a pre-existing tuberculous empyema passed an uneventful postoperative course with perfect wound healing and as decided improvement as any case in the series.

Tuberculosis in the Negro. Benjamin L. Brock and Sam Black. The American Review of Tuberculosis, August, 1931.

Acute exudative tuberculosis rarely seen as such in the white race is not uncommon in the Negro and the mortality rate among the Negroes in many localities is 3 to 4 times as great as the rate for the white race in the same locality.

The monocyte in the peripheral blood plays by far the most outstanding part in the exudative type of tuberculosis. Here it is constantly elevated above the normal level and shows no fluctuation above and below the normal line as is the case in chronic progressive disease. This indicates continuous spread with no evidence of an arrested phase of the disease. Elevation of the lymphocytes in tuberculosis is definitely associated with the arrested phase of the disease and is a manifestation of the immunity process. It is believed that the lymphocyte acquires a qualitative change following continuous reinfection thruout the preadult period and thereby aids in preventing growth of bacilli in the body and in causing their disintegration. The elevation in neutrophiles indicates a reaction to the absorption of toxic products of abscess formation. A comparative lack of continuous reinfection of the Negro race with tuberculosis thruout the early years of life is believed to be a definite factor in altering the immunity process and modifying the subsequent development of the disease. Lack of proper absorption of ultraviolet rays by the Negro race may also be a factor in altering the immunity mechanism in the body.

The Influence of the World War on Tuberculosis Mortality in Civilian Populations. Walter W. Lee. The American Review of Tuberculosis, September, 1931.

The influence of war on tuberculosis mortality is studied on the basis of the experience of Germany and of the United States as recorded in their tuberculosis rates from 1900 to 1928. Massachusetts data are used to compare with German date by age and sex groups.

The rate in the United States rose slightly but significantly during the war period and fell rapidly after the Armistice to a rate about 20 per cent below the prewar trend. The German rates in 1918, exceeded those of the United States by 55 percent. Following the war the rates dropped until 1921, to rise again during the financial crisis of 1922 and 23 to a rate 62 percent greater than that of the United States in 1923. Following 1923, German rates fell to the prewar trend in 1927. The peak in the German rate in 1918, corresponds to the industrial activity and financial depression accompanying the inflation of the German mark. The fall in rates following 1923, coincides with the financial recovery in Germany. Germany apparently lost approximately 280,000 civilians from tuberculosis more than would have died had the war not occurred.

The available data do not indicate that the influenza epidemic of 1918, exerted much, if any, influence on the tuberculosis mortality.

Intrapleural Pneumolysis. B. Noland Carter. The American Review of Tuberculosis, September, 1931.

Open intrapleural pneumolysis is preferred to the closed method in all cases except possibly those with thin string adhesions since it is a clean-cut surgical procedure enabling the operator to expose the adhesion and to determine its attachments, location and character much better than is possible thru a thoracoscope. It also gives him much better control of the situation in case of hemorrhage and there is less chance of contamination due to cutting into the lung. The author describes a method of freeing adhesions by open pneumolysis which has been used successfully in 4 cases he reports.

Pregnancy and Bilateral Phrenic Exairesis Postpartum. Arthur W. Duryea. The American Review of Tuberculosis, September, 1931.

The author reports a case of far advanced pulmonary tuberculosis with tuberculosis of the larynx in a woman six months pregnant. A simultaneous bilateral pneumothorax gave her almost complete symptomatic relief during the lost 3 months of pregnancy. Following delivery a bilateral phrenic exairesis was done in order that the benefit of diminished diaphragmatic excursion from the intra-abdominal tumor might not be lost. The patient was in good condition a year later during which time she had been on a strict sanatorium routine with complete vocal rest and pneumothorax treatments. The baby was removed from the tuberculous enviroment immediately after birth.

BOOK REVIEWS

Tables of Food Values, By Alice V. Bradley, B.S., Supervisor and Instructor of Nutrition and Health Education. State Teachers' College, Santa Barbara, California. Cloth, Price $2.00. The Manual Arts Press, Peoria, Illinois.

Alice Bradleys' book on Tables of Food Values seems to be concise and understandable. I like the way it is divided into average serving figures and 100 gram portion figures. I am sure it will be a great help to dietitions as it is a very thorough and complete book on food values.

Surgical Pathology of the Skin, Fascia, Muscles, Tendons, Blood and Lymph Vessels. By Arthur E. Hertzler, M.D., Surgeon to the Agnes Hertzler Memorial Hospital, Halstead, Kansas, Professor of Surgery, University of Kansas. Cloth, 260 illustrations, 301 pages, J. B. Lippin-

cott Company, Philadelphia, Montreal and London.

This is the second of a series of works on pathology, of various types of tissues; the first being Surgical Pathology of the Diseases of Bones. There are now in preparation: Surgical Pathology of the Genito-Urinary Organs; of The Female Generative Organs; of the Gastro-Intestinal Tract; of the Peritoneum. In addition to this we have the promise from the pen of Dr. Hertzler of Monographs on the Mammary Gland; Diseases of the Neck, Mouth and Jaw, and the Thyroid Gland. As before noted Dr. Hertzler has behind him years of one of the busiest professional careers in the United States. He is tremendously energetic and an observer of the highest type. This work on pathology of varied conditions is finely illustrated, accompanied by text and case reports and should prove of undoubted value to the student and practitioner of medicine and surgery. Professor Hertzler is to be commended upon the selection of the type of work which will prove of great use and interest to all who are fortunate enough to secure the volume.

Gynecology and Urology for Nurses. By Samuel S. Rosenfeld, M.D., F.A.C.S. Adjunct Obstetrician and Gynecologist Lebanon Hospital, New York City; Lecturer in Obstetrics and Gynecology to Lebanon Hospital School for Nurses; Diplomate of the American Board of Obstetrics and Gynecology. Illustrated. Cloth, 230 pages. William Wood and Company, New York, 1931. Price $2.00.

The gynecologist and urologist is constantly in need of skilled assistance, if he is to do the amount of work most of the men in this specialty are engaged in. It therefore follows that anything making for better preparation and understanding on the part of the nurse will be helpful to the physician. The writer attempts to emphasize in his work what the nurse most needs to know in order to be able to aid her patient intelligently. He disclaims any intention of attempting to make doctors of nurses but had in mind the mature, eager, earnest and absorbing heart and mind of the flower of our womanhood—The Nurse. The work naturally takes into consideration much of the preparation for operation and treatment as well as the after treatment of the patient of this class.

Simplified Diabetic Management. By Joseph T. Beardwood, Jr., A.B., M.D., F.A.C.P. Chief of Diabetic Clinic and Associate Visiting Physician Presbyterian Hospital in Philadelphia; Physician in Chief in the Department of Metabolic Diseases, Abington Memorial Hospital; Associate in Cardiology, Graduate School of Medicine University of Pennsylvania. Herbert T. Kelly, M.D., F.A.C.P., Associate in Diabetic Clinic, Presbyterian Hospital in Philadelphia; Associate in Cardiology, Graduate School of Medicine University of Pennsylvania and in the Philadelphia General Hospital. Diets prepared with collaboration of Elsie M. Watt, A.B., formerly dietition Diabetic Clinic Presbyterian Hospital in Philadelphia. Illustrated. Cloth. Price $1.50.

The close observations and treatment fitting the conditions is so essential to the successful management of diabetes that we have lately had numerous works upon this subject. The author bases this work upon his experience in clinics and private practice, and makes no revolutionary departure in the management of diabetic which is rapidly becoming almost standardized. But, in the absence of a physician the intern and nurse must be of the highest intellect if a high ratio of success is to be scored. It seems from the various phases into which this work is divided that the author has performed his task in an unusually fine manner.

The Surgical Clinics of North America. (Issued serially, one number every other month.) Volume 11, No. 5. (Pacific Coast Surgical Association Number—October, 1931). 279 pages with 109 illustrations. Per Clinic year (February, 1931 to December, 1931.) Paper, $12.00; Cloth, $16.00 net. Philadelphia and London: W. B. Saunders Company, 1931.

The Pacific coast may always be counted upon to make an exceptionally good showing in the Surgicial Clinics of North America. It is not feasible to acknowledge all the good things anyone of these issues contain, so the lack of mention of an entire subject need not be taken in a spirit of disregard or a lack of appreciation. We call attention to the "The Epidural and Transsacral Injection of Alcohol For the Relief of Pain" by Gilcreest and Mullen of San Francisco. The handling of the latter stages of malignancy is always a severe problem, very little can be done so anything offering even partial aid should not be overlooked. "Idiopathic Gangrene of the Scrotum" by Brunn and Harris, San Francisco. This deals with a rare condition. However, the treatment so nearly follows that indicated in extravasation of the urine, a terribly fatal condition, that anything offering aid in that is not to be overlooked. "Retroperitoneal Tumors" by Burger and Osborne, San Diego, deals with situations always full of surprises and therefore one of great interest to the busy surgeon. The volume contains many clinics on various types of malignancies, these too are always interesting, are always with us, therefore to be constantly kept in mind.

The Nurse's Medical Lexicon. For the use of Graduate and Student Nurses, of Premedical and Dental Students, and of The General Public. by Thomas Lathrop Stedman, A.M., M.D., Editor of the "Twentieth Century Practice of Medicine," of the "Reference Handbook of the Medical Sciences," and of "A Practical Medical Dictionary;" Formerly Editor of the "Medical Record." New York, William Wood and Company, 1931. Beautifully embossed in silk. 629 pages, price $2.00.

Stedman's Medical Dictionary is one of the standards in use by students and physicians. This lexicion closely follows the arrangement of Stedman's Dictionary. It is not only extremely useful to nurses but would be found equally so to physicians.

The Surgical Clinics of North America. (Issued serially, one number every other month.) Volume 11, No. 4. (Mayo Clinic Number—August 1931) Octavo of 211 pages with 74 illustrations. Per clinic year, February, 1931, to December, 1931. Paper, $12.00; Cloth $16.00 net. Philadelphia and London: W. B. Saunders Company, 1931.

XXIV INDEX TO CONTENTS 1931

AUTHORS

Adams, F. M., Vinita 261
Aisenstadt, E. Albert, Picher 265
Allen, Curtis C., Frederick 43
Andrews, Lelia E., Oklahoma City 160
Babcock, Mrs. W. Wayne, Philadelphia 51
Bailey, Wm. H., Oklahoma City 325
Balyeat, Ray M., Oklahoma City 76-145-240
Barker, C. B., Guthrie 101
Baum, E. Eldon, Tulsa 373
Bishop, Louis Faugeres, Sr. and Jr., N. Y. 234
Blair, Vilray P., St. Louis 271
Blesh, A. L., Oklahoma City 188-283-396
Bollinger, I. W., Henryetta 11
Border, Fowler, Mangum 42
Boyd, Thomas M., Norman 345
Byrum, J. M., Shawnee 365
Carroll, Grayson, St. Louis 356
Collier, E. K., Tipton 279
Cooley, Ben H., Norman 182
Cunningham, S. R., Oklahoma City 13-240-331
Davis, Arthur H., Tulsa 309-406
Denny, E. Rankin, Tulsa 104
Duffy, Francis M., Enid 380
Fisher, Roy, Frederick 35
Fite, Wm. P., Muskogee 238-325
Fox, Raymond H., Altus 45
Fulcher, Joseph, Tulsa 106
Garrett, D. L., Tulsa 406
Goldfain, E. Oklahoma City 332
Gregory, M. S., Oklahoma City 347
Grosshart, Ross, Tulsa 392
Hall, Clark H., Oklahoma City 143
Haralson, Chas. H., Tulsa 296
Hayes, Basil A., Oklahoma City 193
Hayes, P. L., Vinita 261
Hudson, David V., Tulsa 353
Hudson, F. A., Enid 70
Jeter, Hugh, Oklahoma City 109
Kuyrkendall, L. C., McAlester 303
Laugston, Wann, Oklahoma City 404
Lewis, Bransford, St. Louis 356
Long, LeRoy, Oklahoma City 388
Margo, E., Oklahoma City 16-91
Martin, J. T., Oklahoma City 184
Mason, Edward C., Oklahoma City 273
McAlester, A. W., III., Kansas City, Mo. 299
McBride, E. D., Oklahoma City 15
McClure, H. M., Chickasha 88
McGregor, Frank H., Mangum 47
McHenry, L. C., Oklahoma City 155
Meriwether, M. V., Picher 317
Mithoefer, William, Cincinnati, Ohio 292
Moorman, Lewis J., Oklahoma City 65
Mraz, Mrs. John Z., Oklahoma City 93
Musser, J. H., New Orleans 225-377
Neely, Shade D., Muskogee 118
Nelson, Marque O., Tulsa 112
Nesbitt, P. P., Tulsa 248
Newell, W. B., Enid 289
Nickell, U. E., Davenport 161
O'Donoghue, D. H., Tulsa 337-350
Paulus, D. D., Oklahoma City 185
Pounders, Carroll M., Oklahoma City 117-158
Rayburn, Charles R., Norman 1
Reed, Horace, Oklahoma City 183-252
Rice, E. Eugene, Shawnee 122
Riely, Lea A., Oklahoma City 84
Riley, John W., Oklahoma City 190
Rinkel, Herbert J., Oklahoma City 240
Robinson, G. Wilse, Kansas City 351
Robinson, J. H., Oklahoma City 86
Sayers, R. R., Picher 317
Schattyn, Martyn, St. Louis 356
Shuler, Jas. L., Durant 400
Smith, Clinton K., Kansas City 360
Smith, D. O., Tulsa 19
Smith, Ned R., Tulsa 8
Smith, Ruric N., Tulsa 180
Stagner, G. H., Erick 34
Stevenson, James, Tulsa 385
Stout, Marvin E., Oklahoma City 275
Taylor, Wm. M., Oklahoma City 141
Tisdal, V. C., Elk City 37
Turner, Henry H., Oklahoma City 148
Vandever, H. F., Enid 302
Vieregg, Frank R., Clinton 306
Von Wedel, Curt O., Oklahoma City 75-164
Wails, Theodore G., Oklahoma City 157
Ward, Benjamine W., Tulsa 123
Watson, F. L., McAlester 394
Weber, Henry C., Bartlesville 178
White, A. W., Oklahoma City 245
Witcher, Edward K., Tulsa 327

A

Abdomen, Acute Surgical 35
Abortions in Russia 288
Abscess, Pulmonary, Early Diagnosis and Prompt Treatment 65
Address, Eye, Ear, Nose and Throat, Chairman Ruric N. Smith, M.D., Tulsa, 1931 180
Address, General Medicine, Chairman, (Neuropsychiatry and Medical Men) Ben H. Cooley, M.D., Norman 182
Address, President's, Henry C. Weber, M.D., Bartlesville 178
Anemia, Agranulocytic 19
Anemia—Case of Miss K, Report of 404
Anesthesia 414
Anesthesia, Avertin, from the Anesthetist's Standpoint. A Resume of 18 Months Experience 415
Anesthesia, Intravenous, With Sodium Amytal in Surgery 396
Anesthesia, Spinal and Splanchnic 123
Anesthetic, Local, in A Country Hospital by a Country Doctor 43
Anesthetic, Local in the Treatment of Fractures 122
Annual Session, Transactions of the Thirty-ninth, 1931, Oklahoma City 200
Antrum, Acute and Chronic Problems 292
Appendicitis, Acute 183
Appendicitis, Anything New About Something Old 88
Arsphenamine, Appraisal of the Newest Synthetic Bismarsen In the Treatment For Syphilis 208
Arsphenamine, Two Types of 136
Arthritis, Chronic Statistical Study of 1100 Cases 27
Arthritis, Diagnosis and Treatment 327
Arthritis, Rationale of Vaccine Therapy in 332
Artificial Pneumothorax, Leucocytic Action 209

Asbestosis, Pulmonary ... 58
Ascariasis, Clinical Study of ... 399
Asthma in Children, Symptomatology of ... 145
Atelectasis, Massive and Post Operative Pneumonia ... 22

B

Bilby, Geo. N., State Commissioner of Health ... 56
Biliary Tract, Post Operative Complications in Surgery, Prevention and Treatment ... 190
Bismuth Compounds, Curative Values ... 136
Bladder, Traumatic Rupture of, with Extravasation ... 128
Blood Sugar Level, Effects of Liver on ... 168
Branchial Cleft, Malignant Degeneration of ... 52
Brains, Traumatic and Inflammatory, Pneumographic Demonstration ... 1
Breast Milk, Rated Best for Infants ... 339
Bright's Disease, Edema, Mechanism of in Relation to Clinical Classification of ... 405
Browsing, Some Surgical ... 394
Burns, Modern Treatment of ... 273
Burns, Treatment and Prevention of Complications ... 271

BOOKS—NEW

Abdomino-Pelvic Diagnosis in Women, Arthur W. Walsheid ... 61
Allergy, Clinical, Asthma and Hay Fever, Mechanism and Treatment, Francis M. Rackmann ... 30
Anatomy, Simple Lessons in Human, B. C. H. Harvey ... 372
Blood Picture, the Schilling and Gradwhol ... 313
Chronic Arthritis and Rheumatoid Affections, Bernard Langdon ... 29
Crippled Children, Their Treatment and Orthopedic Nursing, McBride ... 210
General Surgery (The Year Book for 1930), Everetts A. Graham ... 210
Gonorrhea in the Male and Female, Percy S. Pelouze ... 371
Gynecology and Urology for Nurses, Samuel S. Rosenfeld ... 419
Introduction to Gynecology, C. Jeff Miller ... 315
Mayo Clinic Collected Papers for 1930 ... 314
Medicine, Textbook of, Russell L. Cecil ... 30
Nurse's Medical Lexicon, The ... 419
Nutrition and Diet in Health and Disease, James S. McLester ... 314
Papers and Speeches of John Chalmers DeCosta ... 210
Proctoscopic Examination and Treatment of Hemorrhoids and Anal Pleuritis, Lewis A. Bruce ... 314
Radiation, Practical Therapy in, Ira L. Kaplan ... 61
Simplified Diabetic Management ... 419
Surgical Clinics of North America ... 30
Surgical Clinics of North America ... 210
Surgical Clinics of North America ... 313
Surgical Clinics of North America ... 419
Surgical Pathology of the Diseases of Bones ... 372
Surgical Pathology of the Skin, Fascia, Muscles, Tendons, Blood and Lymph Vessels ... 418
Surgery, Modern, J. Chalmers DeCosta ... 61
Tables of Food Values ... 418
Transactions of College of Physicians and Surgeons ... 315
Traumatotherapy, John J. Moorehead ... 61

C

Cancer, Oral, Early Stages of ... 206
Cancers, Cervical, A Five to Fifteen Year Study of 192 Cases ... 415
Carbuncles, X-ray Treatment of ... 97
Carcinoma, Factors in Grading ... 97
Carcinoma, of the Colon and Rectum, Diagnosis and Principles of Treatment ... 414
Cardiac Pain, Observations on ... 234
Cardio-Vascular Syphilis, Treatment of ... 136
Carotinemia, Resulting from restricted diet ... 353
Cavity, Peritoneal, Why Drain ... 392
Cerebral-Spinal Stimulation ... 211
Children in Drought Area ... 339
Chorea, Treatment by Induction of Fever ... 306
Clinic, Crippled Children, Oklahoma City ... 141
Clinic, Dallas Southern Clinical Society, 1931 58
Clinic, Dallas Southern Clinical Society News 339
Clinic, Endocrine ... 148
Clinic, Oklahoma City, Fall, 1931 ... 167
Cod Liver Oil ... 30
Cod Liver Oil, Should It Be Flavored? ... 376
Committee, Annual Meeting ... 56
Committee Reports, Cancer Study and Control ... 174
Committee Reports, Crippled Children ... 174
Committee Reports, Industrial and Contract Practice ... 174
Committee Reports, Legislative ... 174
Committee Reports, Medical Economics, 1931 173
Common Duct Lesions ... 185
Compensation Cases, Legal and Disability ... 325
Compression—Jugular, An Adjunct in the Treatment of Syphilis of the Central Nervous System ... 416
Contract Medicine, Opposition to ... 58
Council Meeting, May 12, 1931, Oklahoma City ... 201
Crippled Children's Clinic, Oklahoma City ... 141
Cross-eyes, A Plea for Early Treatment ... 101

D

Dementia Praecox ... 254
Diabetes and Myelona ... 283
Diabetes Mellitus, and Ocular Symptoms of ... 299
Diabetic Lipemia Retinalis ... 334
Diabetic, A Surgical ... 84
Diarrhea, How To Combat ... 330
Digitalis in Ambulatory Cardiac Patients ... 168
Diphtheria,Toxoid, in Infancy ... 355
Dislocations, Treatment of ... 337
Dislocation, Knee ... 60
Dislocation, Congenital Hip ... 91
Diuresis From Water Soluble, Bismuth ... 175

E

Ears, Chronic, Discharging, A Menace in Children ... 157
Education, Medical, Relationship to the Cost of Medical Care ... 138
Education, Relation to Professions ... 138
Empyema, Pneumococcic ... 22
Encephalitis ... 27
Encephalitis, Treatment of ... 261
Endocrine Clinic ... 148
Epilepsy, A Case of Mechanical ... 351
Epinephrine, Unusual Skin Reactions ... 283
Eye Complications, Following Head Injuries ... 296
Exairesis, Postpartum—Pregnancy and Bilateral Phrenic ... 418

EDITORIALS

Aid in Time of Trouble 369
American Medical Association, Philadelphia 255
American Medical Association, Philadelphia, Delegates Report 256
Anesthesia, Problems as to Choice 368
Annual Fall Clinics, Oklahoma City 312
Anti-Freeze Mixtures, Dangers of 370
Avertin, Not accepted by the Council 24
Cancer, American Journal of 95
Cooperation in Small Towns 340
Diabetic Foot, Care of 95
Duodenal Ulcer 54
Extension Department, University of Oklahoma 55
Films, Moving Picture, Our New 408
Keep Apace 285
Laboratory, The Diagnostic 24
Medical Practice Act, Violation of 96
Medical Practice Lagging 340
Post Graduate Work in Oklahoma 166
Reason in Practice 23
Registry of Bone Sarcoma 130
Rich and Charity, The New 286
Southwestern Oklahoma Hospitals 53
State Board of Medical Examiners Biennial Report, 1928-1929 and 1929-1930 95
Summer Perils 255
The Oklahoma City Session, 1931 199
The 1932 Session, Plans for 312
The Wickersham Report 55
This Issue (Miscellaneous) 129
To Society Officers and all Members 409
University Extension and Post Graduate Medical Instruction, Opinions on 199
University Hospital and the Chiropractic Muddle 311
Varicose Veins, Injection Dangers 285
Why Such A Hurry? 409
Wine—Grape Concentrate, Loses Out 409
Woman's Auxiliary 341
Editorial Notes, Personal and General 25-56-96-130-167-257-313-342-370

F

Femur, Fracture of Neck 15
Fever, Undulant, Treatment of 334
Fistula, Fecal 45
Foot and Leg, Diseases of 283
Foreign Bodies in the Lung 309
Fracture, Acute, of Femur in Children 28
Fracture, Birth of the Humerus 287
Fracture, Clinic, Oklahoma City 240
Fracture, Colles' Reconstruction Surgery by Steindler 135
Fracture, Commission Report on Intracapsular 28
Fracture, Compression of Spine 11
Fracture, Delayed and Non Union 238
Fracture, Involving Articulation 287
Fracture, Local Anesthia to Treatment of 122
Fracture, Neck of Femur in Aged 15
Fracture, Skull Clinic 252
Fracture, Treatment by Skeletal Traction 331

G

Gall-Bladder, Diseases of, (Symposium) 184
Gall-Bladder Disease, Disturbances of Right Urinary Tract Simulating 193
Gall-Bladder, Operative Aspects of 188
Gall-Bladder, Pathology and Diagnosis of 184
Gastroenteroptosis, A Surgical Condition 70
Gastro-Duodenal Ulcer, Medical Aspect of 245
Gastro-Duodenal Ulcer, Surgical Aspect of 245
Gastrointestinal Tract, Fusospirochaetal Infection of 380
Gestation, Hygiene of 86
Gestation, Uterine, Extra 400
Glycogen in Medical and Surgical Conditions 33
Goiter, ... 42
Goiter, Meeting of the Goiter Association, Kansas City Meeting 99

H

Hand, Reconstruction of Burned 164
Hay Fever, Secondary Factors in Seasonal 240
Head Injuries and Eye Complications 296
Heart, The Diseased and Normal 225
Heliotherapy in Treatment of Tuberculosis 27
Hematuria 207
Hemophilia, and Female Sex Hormone 336
Hemorrhage, Spontaneous, Subarachnoid 52
Hernia, Mediastinal 59
Herpes, Zoster, with Varicella 136
House of Delegates, May 11 and 12, 1931, Oklahoma City 201-202
Hydronephrosis, Experimental Studies as to the Origin of 207
Hysterectomy, Vaginal Indications and Contraindications 275

I

Infant Feeding, Preventive, Ten Years of 387
Infantile Paralysis 135
Infection, Syphilitic, Effects of Fresh on Classic Attacks of Tertian Malaria 206
Infectious Diseases, Specific Therapy in the; Some Observations On 377
Insomnia in Tuberculosis 209
Intestinal Obstruction, Nature and Treatment of 254
Intrapleural Injection of Olive Oil in Pulmonary Tuberculosis 59
Intravenous Urography 106
Ionization 302

J

Joint Injuries, X-ray Treatment of 21

K

Kidney, Solitary cyst of, with Calcification 365
Kidney, Surgery, Decline and Revival of Movable 356
Kidney, Torsion of 343
Kidney, Traumatic Rupture of 360
Knee, Dislocation of 60
Knee, Treatment of Common Injuries of 98

L

Laboratory, Diagnostic 24
Laboratory, Endorsed Therapeutic Agents 62
Lachrymal Sac, Intranasal Operation 306
Leukemia Lymphocytic, Acute 97
Liver Extract, Intramuscular Use of 272
Lung Unusual Foreign Bodies in 309
Lupus Erythematosis Disseminatus 416

M

Malarial Parasite 371
Malaria, Syphilitic Infection of 206
Mediastinum, Hernia of 59
Megabladder, Functional 342

Membership Roster, 1931 ... 212
Meningitis, Serous Spinal ... 197
Menopause, Thyroid and the ... 160
Milk Protein, Indispensable in Summer Diarrhea Cases ... 324
Mycoses, Interdigital ... 259
Myelitis, Postvaccinal ... 330
Myeloma and Diabetes, Insipidus ... 283

N

Narcotic Act, Registration Under ... 56
Neoplastic Diseases, Age, Sex, Distribution and Incidence ... 97
Nephritis, Acute, Diffuse, Glomerular, Etiology and Pathogenesis ... 104
Nephritis—Glomerulo, Acute Diffuse, Familial Epidemic of—Relation to Pathogenesis of Disease ... 395
Nephropathies ... 109

O

Obstetrics, Sane ... 291
Ocular Symptoms and Complications of Diabetes Mellitus ... 299
Oklahoma Hospital and Sanitarium ... 58
Oleothorax ... 209
Oleothorax, Intrapleural Injection of Olive Oil in Pulmonary Tuberculosis ... 59
Osteochondritis Deformans Juvenilis ... 13

OBITUARIES

Applewhite, Benj. F., Tecumseh ... 259
Bradford, Walter Claudius, Shawnee ... 412
Day, Curtis R., Oklahoma City ... 131
Griffith, Alfred, McAlester ... 371
Henry, Robert H., Ardmore ... 313
Newell, Everett G. ... 26
Marshall, James W., Shawnee ... 258
Patton, Joseph A., Stilwell ... 26
Poynor, E. E., Stilwell ... 27
Scott, James D., Holdenville ... 413
Tilley, William T., Muskogee ... 131
Weber, Mrs. Etta J., Bartlesville ... 412

P

Pain, Cardiac ... 407
Paralysis, Infantile ... 135
Paralysis, of Pott's Disease ... 60
Paresis, Sodoku, Treatment in ... 61
Phrenicoexairesis in Pulmonary Tuberculosis ... 59
Plastic Surgery, Some Newer Methods in ... 75
Pneumococcic, Empyema ... 22
Pneumographic, Demonstration of Traumatic and Inflammatory Brains ... 1
Pneumolysis, Intrapleural ... 417-418
Pneumonia, The Treatment of, With Special Reference to Glucose Therapy and Theories As to Its Probable Action ... 373
Pneumonia, Post-operative ... 22
Pneumothorax, Artificial, Cerebral Air Embolism, Complicating ... 209
Poison, From Natural Gas and Combustion Products ... 290
Poliomyelo-Encephalitis ... 27
Poliomyelitis, Anterior, Industrial Aspect of ... 350
Pott's Disease, Paralysis in ... 60
Powdered Milks, Modification of ... 197
Pregnancy, Toxemias, Symptoms and Treatment ... 161
Problems, Some Medical We Should Solve ... 178
Program, 39th Annual Session, Oklahoma City, May, 1931 ... 132
Program, 39th Annual Session, Oklahoma City, May, 1931 ... 169
Prostatitis, Diagnosis and Treatment of Non-specific ... 118
Psychoses, With Other Somatic Diseases ... 345
Pyelography, Intravenous, In Diagnosis of Renal Tuberculosis ... 137
Pyelonephritis, Diagnosis and Treatment of ... 353
Pyloric Stenosis in Infancy ... 143
Psoriasis, Pustular ... 259
Psychochemical Factors in Mental Disorders ... 310

R

Reconstruction of The Burned Hand ... 164
Renal Function ... 342
Reports, Necrology, 1931 ... 202
Reports, Crippled Children, 1930-1931 ... 205
Reports, Oklahoma State Board of Medical Examiners ... 210-314-372
Report, Secretary-Treasurer-Editor, 1930-1931 ... 203
Respiration Obstruction, Cases of, In Infants and Children ... 155
Responsibility to The Nervous Patient, Our ... 347
Rich and Charity, The New ... 286
Rickets, New Light on ... 168
Right Urinary Tract Disturbances Simulating Gall-Bladder Diseases ... 193
Ringworm of the Feet, Prophylaxis of ... 371
Roster of Members, 1931 ... 212
Russia, Abortions in ... 288

S

Scarlet Fever, Healthy Carrier ... 168
Sensitizations, Variations and Fluctuations, Regional, Seasonal, Dietary and Other Influences Accounting for ... 416
Silicosis ... 317
Skin, Powers of Self-Sterilization ... 208
Sodium Amytal, Indications in Obstetrics ... 279
Spinal Cord, Tumors, Localization of ... 8
Spine, Compression Fractures ... 11
Spleen, Miliary Tuberculosis of, With Thrombopenic Purpura Hemorrhagica ... 391
Spleen, Spontaneous Rupture after Malarial Treatment ... 287
Spondylolisthesis ... 98
Strictures, Urethral, and Marriage ... 288
Surgical Acute Abdomen ... 37
Surgery, Traumatic ... 265
Syphilis, Bismarsin in Treatment of ... 208
Syphilis, Complications of Treatment for ... 385
Syphilis, Congenital, A Study of the Blood Picture in, and the Effect of Anti-Syphilitic Therapy Upon the Hemoglobin and Cellular Elements ... 416
Syphilis, Controversy Regarding ... 97
Syphilis, Gastritis, Gastrectomy, and Pernicious Anemia ... 332
Syphilis, Hereditary ... 117
Syphilis, Is it Curable ... 259
Syphilis, Laboratory Tests in Diagnosis and Treatment ... 112
Syphilis, Latent, Indications and Contraindications for Treatment ... 207
Syphilis, Newer Methods of Treatment ... 288
Syphilis of the Neck of the Uterus ... 288
Syphilitic Infection, Effects of Fresh on Classic Attacks in Tertian Malaria ... 206
Syphilology and Urology ... 206

T

Testicles, Torsion of ____ 343
Tetanus, Frequency, Prevention and Treatment ____ 47
Tetany, Gastric, Infantile, Following Operation for Pyloric Stenosis ____ 141
Thoracoplasty ____ 59
Thyroid and the Menopause ____ 160
Tonsils, as foci of infection ____ 303
Tryparsamide Therapy ____ 371
Tuberculosis and Insomnia ____ 209
Tuberculosis in Children, Vitamine D in Bone ____ 417
Tuberculosis, in the Negro ____ 418
Tuberculosis, Leukocytic, Reaction in Patients Receiving Artificial Pneumothorax ____ 209
Tuberculosis, Pulmonary, Phrenicoexairesis in ____ 59
Tuberculosis, Pulmonary, Serum Calcium in ____ 209
Tuberculosis, Pyelography, in Renal ____ 137
Tuberculosis, Studies on Incidence of Infection ____ 417
Tuberculosis, Recent Facts On Transmission of ____ 394
Tuberculosis, The Influence of the World War on Mortality in Civilians ____ 418
Tuberculosis, Treatment by Fusion of Joints of Lower Extremities ____ 59
Tumor, Rare Orbital, in a Child (Epithelioma Adenoides Cysticum)—Case Report ____ 406
Tumors, Spinal Cord ____ 8
Tumors, Malignant of the bladder ____ 343
Tumors, of Testis ____ 208

U

Undulant Fever ____ 211
Undulant Fever, Treatment by Autogenous Antigen ____ 334
University Extension Work ____ 175
University Extension Work, and Post-graduate Medical Instruction, Some Opinions on ____ 199
Urachus, Cysts of the—Case Reports ____ 388
Urea, Blood, Hench-Aldrich Test ____ 131
Urinary Gravel, Pathogenesis on ____ 342
Urography, Intravenous ____ 106
Urology, Minutes of Staff Meeting, University Hospital ____ 137-207
Urology and Sphilology ____ 136-207
Urticaria, Diagnosis and Treatment ____ 76
Uteri—Cervix, Carcinoma of, a Study of 121 Cases of ____ 415
Uteri—Cervix, Reradiations in the Radium Therapy of Carcinoma of ____ 415

V

Varicella, Herpes Zoster ____ 136
Varicose Veins, Treatment of ____ 131
Viosterol, The Summer-Time Use of ____ 404
Vitamines, A and D ____ 339

W

Water-Soluble Bismuth, Diuresis ____ 175
Weight Reduction and Circulatory Efficiency 211
Woman's Auxiliary, Eastern District ____ 51
Woman's Auxiliary ____ 93

X-Y-Z

X-Ray Pelvimetry, New Method of ____ 62
X-Ray Therapy of Plantar Warts ____ 206
X-Ray Treatment of Carbuncles ____ 97
X-Ray Treatment of Joint Injuries ____ 27

The

Tulane University

of

Louisiana

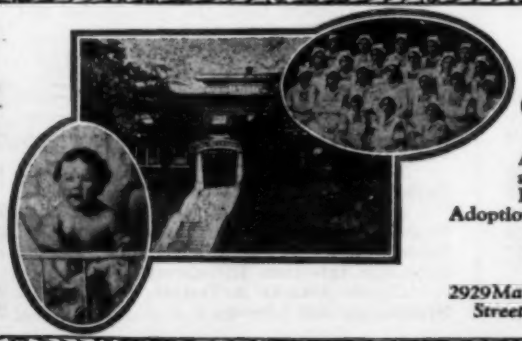
GRADUATE SCHOOL OF MEDICINE

Approved by the Council on Medical Education of the A.M.A.

Post-graduate instruction offered in all branches of medicine. Courses leading to a higher degree have also been instituted.

A bulletin furnishing detailed information may be obtained upon application to the

DEAN
GRADUATE SCHOOL OF MEDICINE
1430 Tulane Avenue
New Orleans, La.



The Willows

Maternity Sanitarium

ESTABLISHED 1905

A privately operated seclusion maternity home and hospital for unfortunate young women. Patients accepted any time during gestation. Adoption of babies when arranged for. Prices reasonable.

Write for 90-Page Illustrated Booklet

2929 Main Street — The Willows — Kansas City, Mo.

EARLY SYPHILITIC TREATMENT SHOULD BE PERSISTENTLY CONTINUOUS

The healing of syphilitic lesions, and the production of a negative Wasserman following a single course of six or eight arsenical injections, may cause the luetic individual to believe himself protected. The patient, who, because of this false sense of security, discontinues treatment, is in great danger of developing a more serious case of neurosyphilis.

For the full protection of such individuals and of those with whom they come in contact, treatment should be continued and should consist of at least four courses of a satisfactory arsenical at suitable intervals.

The high therapeutic efficacy, low toxicity and ready solubility of Squibb Arsenicals provide as high and permanent a therapeutic benefit to your patients as it is possible to obtain.

Write to Professional Service Department, 745 Fifth Avenue, New York, for booklets giving complete information about Squibb Arsenical Products.

Neoarsphenamine Squibb Improved—Marketed in ampuls of 0.15, 0.30, 0.45, 0.60, 0.75, and 0.90 Gm. and in packages containing an ampul of the arsenical together with a 10 cc. ampul of Sterile Double-Distilled Water Squibb.

Arsphenamine Squibb—For intravenous injection after neutralization. Readily soluble in cold distilled water. Marketed in 0.1, 0.2, 0.3, 0.4, 0.5, and 0.6 Gm. ampuls.

Sulpharsphenamine Squibb—For intramuscular injection after simple solution in distilled water. Supplied in 0.1, 0.2, 0.3, 0.4, 0.5, and 0.6 Gm. ampuls.

E·R·SQUIBB & SONS, NEW YORK
MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858

Grandview Sanitarium

KANSAS CITY, KANSAS (26th St. and Ridge Ave.)

A High Grade Sanitarium and Hospital of Superior Accommodations for the care of

Nervous Diseases
Mild Psychoses
The Drug Habit
and Inebriety

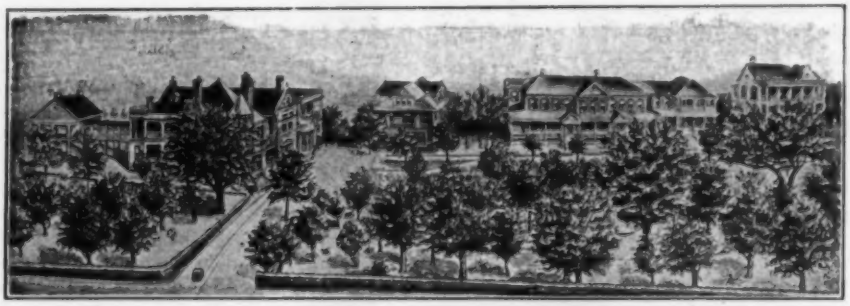
Situated on a 20 acre tract adjoining City Park of 100 acres. Room with private bath can be provided.

The City Park line of the Metropolitan Railway passes within one block of the Sanitarium. Management strictly ethical

TELEPHONE Drexel 0019

E. F. DeVILBISS, M. D., Supt. Office, 1124 Professional Bldg. KANSAS CITY, KANSAS

Send For Booklet



DR. MOODY'S SANITARIUM

SAN ANTONIO, TEXAS

FOR NERVOUS AND MENTAL DISEASES, DRUG AND ALCOHOL ADDICTIONS, AND NERVOUS INVALIDS NEEDING REST AND RECUPERATION

Established 1903, Strictly ethical. Location and climate delightful summer and winter. Approved diagnostic and therapeutic methods. Modern clinical laboratory. Steam heat, electric lights, hot and cold running water in bed rooms. Seven buildings, each with separate lawns, constituting seven distinctive units, each featuring a small separate sanitarium with the further advantage that patients can be discriminately chosen for each and moved to convalescent buildings upon improvement and can have a broader scope of nursing and medical supervision, all affording wholesome restfulness and recreation, indoors and outdoors, tactful nursing and homelike comforts. Own Jersey dairy. Fifteen acres of ground, 350 shade trees, cement walks, play grounds. Surrounded by several hundred acres of beautiful parks, Government Post and Country Club. On highway to North Loop and other beautiful driveways in the country including Austin Post Road. One block from street cars, 10 minutes to center of city.

T. L. MOODY, Supt. and Res. Phys. **J. A. McINTOSH, M.D., Res. Phys.**

STUART-NELSON
LABORATORIES

316 Roberts Bldg., Sixth & Main Streets, Tulsa, Oklahoma.

X-Ray Diagnosis and
Superficial and Deep Therapy
L. H. Stuart, M. D.

Clinical Pathology
Tissues, Wassermann (Kolmer, Kahn and Kline), Blood Chemistry, Bacteriology and all Clinical Routine.
I. A. Nelson, M.D.

SPRINGER CLINIC
604 South Cincinnati Avenue
Tulsa, Oklahoma

COMPLETE CLINICAL FACILITIES
Diagnosis X-Ray Radium
Urology Syphilology Surgery

M. P. Springer, M.D. D. L. Garrett, M.D.
D. O. Smith, M.D. E. G. Hyatt, M.D.
Malcolm McKellar, M.D. K. C. Reese, M.D.
Orion Thompson, M.D. Arthur H. Davis, M.D.

DR. A. L. SKOOG
—wishes to announce the resumption of consultations for nervous and mental cases after some months of visiting and work in several European clinics. Out-of-town consultations considered.

Appropriate arrangements in Kansas City for patients requiring confinement.

Twenty-five years' experience limited to study, practice and consultations in the field of neurology and psychiatry.

Address— 1310-1316 Rialto Bldg., Kansas City, Mo.

TROWBRIDGE TRAINING SCHOOL
Established 1917

A Home School for Nervous and Backward Children
THE BEST IN THE WEST

Beautiful Buildings and Spacious Grounds, Equipment Unexcelled, Experienced Teachers, Personal Supervision given each Pupil. Resident Physician. Enrollment Limited. Endorsed by Physicians and Educators. Pamphlet upon Request.

Address E. HAYDN TROWBRIDGE, M.D.
650 Chambers Bldg., Kansas City, Mo.

THE▲ Medical Profession Needs This Service

Complete
Finance and Credit
Facilities
For The State of Oklahoma

O. F. A. C. Deferred Payment Plans . . . . . cover every sound field of installment credits. Our specialized service developed for physicians, available only to members of the Oklahoma State Medical Association, provides liquidation of accounts and financing of credit business.

OKLAHOMA FINANCE AND ACCEPTANCE CORPORATION

EXECUTIVE OFFICES
Hightower Bldg. Oklahoma City, Okla.
Telephone 7-8581—7-8582
Long Distance 716

References: The Bradstreet Co.
R. G. Dunn & Co.

Oklahoma Finance Acceptance Corp.
Hightower Bldg., Oklahoma City, Okla.

Please send without cost or obligation complete information your service to Physicians and Surgeons.

Name _____ M.D.
Street _____
City _____

A Maternity Garment
Proportioned to the Figure Type

Model No. 3061, with a higher top line and suitable groin and cupped buttock length, is built for the long-bodied woman. Low abdominal lift to remove bladder pressure and hold the organs firmly yet comfortably to place. The Camp Patented Adjustment provides dependable and adjustable sacro-iliac support. Extra abdominal lacings provide for body development.

There is a Camp Support proportioned to every figure type—suiting body outlines and stature as well as the special maternity condition.

CAMP Supporting Garments

Sold at Department Stores, Surgical Section, and Corset Specialty Shops. Write for Physician's Manual.

S. H. CAMP *and* COMPANY

Manufacturers, JACKSON, MICHIGAN

CHICAGO 1056 Merchandise Mart | NEW YORK 330 Fifth Avenue | LONDON 252 Regent Street, West

---

JAMES Y. SIMPSON, M.D.
Neurologist and Addictologist

HERMON S. MAJOR, M.D.
Neuro-Psychiatrist

SIMPSON-MAJOR SANITARIUM

310 Euclid Avenue — Kansas City, Missouri

Nervous Diseases

Selected Mental Cases

Alcohol Drugs and Tobacco Addictions

Electricity
Heat
Water
Light
Exercise
Massage
Rest
Diet
Medicine

Beautifully situated in a pleasant residence section of the city. Fully equipped and well heated. All pleasant outside rooms. Large lawn and open and closed porches for exercises. Experienced and humane attendants. Liberal, nourishing diet. Resident physician in attendance day and night.

Digitan

TRADE MARK

A digitalis preparation of dependable potency, stable, accurately assayed and physiologically standardized. Digitan is manufactured from carefully selected leaves by special processes. It retains its activity unimpaired for years; is dependable and exceedingly uniform in its action. Digitan contains the active glucosides, digitoxin and digitalin, in high concentration. It is free from digitonin and substantially free from other inert substances. Your prescription pharmacist can supply Digitan in four convenient forms permitting very accurate administration of the drug. Write for literature.

MERCK & CO. INC.

MANUFACTURING CHEMISTS

RAHWAY, N. J.

"COUNCIL ACCEPTED"

COPYRIGHT, 1932, MERCK & CO. INC.

TRADE

PYRIDIUM

MARK

Phenylazo-Alpha-Alpha-Diamino Pyridine Mono-Hydrochloride (Manufactured by The Pyridium Corporation)

A URINARY ANTISEPTIC

Pyridium given orally affords a quick and convenient method of obtaining bactericidal action when treating gonorrhea, non-specific urethritis, and other chronic or acute genito-urinary infections. Pyridium penetrates quickly through denuded surfaces and mucous membranes and is rapidly eliminated through the urinary tract. In therapeutic doses Pyridium is neither toxic nor irritating. The Council on Pharmacy and Chemistry of the American Medical Association has accepted Pyridium for inclusion in New and Non-Official Remedies. You can therefore prescribe this drug with full confidence that its therapeutic action will conform to the claims made for it. Avoid substitutes. Your prescription pharmacist can supply Pyridium in four convenient forms: as tablets, powder, solution or ointment. Write for the new 30-page booklet which fully describes the clinical use and application of Pyridium.

MERCK & CO. Inc.

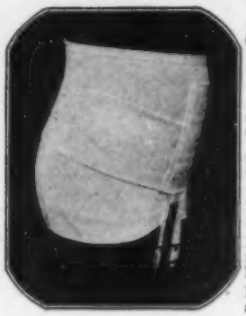
MANUFACTURING CHEMISTS

RAHWAY, N. J.

"COUNCIL ACCEPTED" ACCEPTED

COPYRIGHT, 1931 MERCK & CO. INC.

"STORM"



The New "Type N" Storm Supporter

meets demands of present styles in dress.

Long special laced back.

Extension of soft material low on hips.

Hose supporters attached.

Adaptable to Pregnancy, Ptosis, Hernia, Obesity, Sacro-Iliac Relaxation, High and Low Operations, etc. Made of Cotton, Linen and Silk. Washable as Underwear.

Ask for Literature

Each belt made to order in 24 hours

KATHERINE L. STORM, M.D.

Originator, Owner and Maker

1701 Diamond Street **Philadelphia**

MEN ARE NOT IMMUNE

EXCESSIVE perspiration does not search out its victims by sex. Men just as often suffer from its discomforts as women. This is especially true of hyperidrosis of the axillae, hands and feet.

The physical discomfort and social implication of excessive perspiration are equally distressing to men and women.

NONSPI

(AN ANTISEPTIC LIQUID)

checks the perspiration and prevents the odor, too. It needs to be applied only once or twice a week to those parts of the body not exposed to adequate ventilation. Trial supply gladly sent to physicians on request.

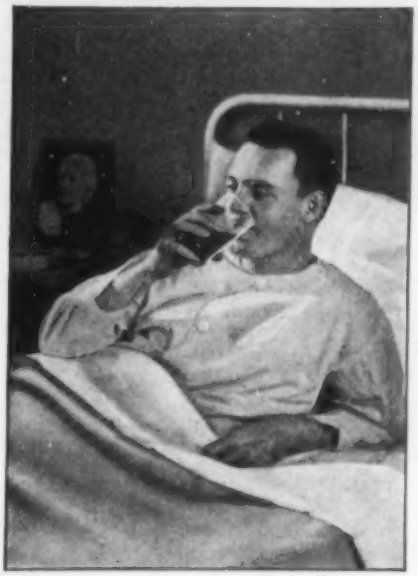
YES, I'd like to try NONSPI. Please send me a free trial supply.

Name.....

Address.....

City..... *State*.....

THE NONSPI COMPANY, 117 West 18th Street, N.Y. City



For *hyper-nutrition* in post-operative cases

A delicious food drink—easily digested—quickly metabolized

DOCTORS have been quick to discover in Cocomalt a high caloric food of ready digestibility, ideal in post-operative cases.

This delicious chocolate-flavor food drink imposes no strain upon the digestive system. It meets the demand for a highly nutritious food that does not produce stasis. Cocomalt greatly aids digestion by helping to digest the starches of other foods.

A scientific food-concentrate

Cocomalt is a balanced combination of milk protein, milk minerals, concentrated cocoa, sugar, barley malt and whole egg. Made as directed, it increases the caloric value of a glass of milk 72%—adding 40% more protein, 56% more mineral salts, 188% more carbohydrates, *but only 12% more fat.*

Cocomalt contains Vitamin A, Vitamin B complex, and Vitamin D. Especially valuable for growing children, convalescents, nursing and expectant mothers. At all grocery and leading drug stores. Mail coupon for *free* trial can.

Cocomalt

DELICIOUS HOT OR COLD

ADDS 70% MORE NOURISHMENT TO MILK

R. B. DAVIS CO., Dept. All-12 Hoboken, N. J.

Please send me, without charge, a trial can of Cocomalt.

Name.....

Address.....

City..... *State*.....

Hitch Your Wagon to the Stars

✪ Quality ℞ Service ✪ Orthogon Lenses
✪ Orthogon "D" Bifocals ✪ Panoptik Bifocals

THOUGH your service and ours differs in many respects, there is a common ground on which we meet. You must satisfy your patient's needs for better vision and we must satisfy you with our materials and services.

You do not believe in skimping in the examination of your patient's eyes. Quality examinations and quality materials and services go hand in hand.

What happens when you entrust your prescription to products and craftsmen unworthy of the quality examination and findings you have made? The entire structure of confidence is weakened at its foundation unless the prescription is properly and intelligently interpretated.

We see our destination clearly. Our future progress is dependent upon the use of quality products and the employment of craftsmen of the highest skill. With these we are confident of our standing with you, your professional brothers and the public.

Hitch your wagon to these optical stars and be sure of your destination. Ride with us on the crest of optical excellence to prosperity and public confidence.

Remember—the results of your examination are only as good as the ability of the finished glasses to adequately interpret your prescription.

RIGGS OPTICAL COMPANY

There's a Riggs Office Conveniently Near You

ARLINGTON HEIGHTS SANITARIUM

(Incorporated Under the Laws of Texas)

For Nervous Diseases and Selected Cases of Mental Diseases

POST OFFICE BOX 978 **FORT WORTH, TEXAS**

BRUCE ALLISON, M.D.
Resident Physician

JAS. D. BOZEMAN, M.D.
Resident Physician

JNO. S. TURNER, M.D., Consulting Physician

from the laboratories of

HOFFMANN-LA ROCHE

Makers of Medicines of Rare Quality

DIGALEN *'Roche'. . for the heart*

Ways to Compensate

for the "DON'TS"

ON THE DIABETIC DIET

If what the patient *can* eat be made more varied and more appetizing, conforming to the "don'ts" on the diet will seem much less of a hardship. Knox Sparkling Gelatine brings change to the diet without involving deviation *from* the diet. Its use introduces more than fifty appealing dishes to the diabetic routine—all built up from the basic foods allowed.

The splendid thing about Knox Gelatine is that it can be used freely and safely. It is pure, granulated gelatine. It contains no sugar, no coloring, no flavoring . . . no synthetics of any kind. It combines ideally with other foods.

Knox has prepared a Diabetic Recipe Book. Many physicians have found this book to be valuable, giving it to their patients as a supplement to the diet list. It is available in any quantity for physicians who desire it. For your convenience, a coupon is printed below. Just send it in.

WINTER SALAD (*Six Servings*)

	Grams	Prot.	Fat	Carb.	Cal.
2 teaspoons Knox Sparkling Gelatine	4.5	4	..	..	..
¼ cup cold water	..	..	..	..	..
½ cup hot water	..	..	..	..	..
½ teaspoon salt	..	..	..	..	..
¼ cup vinegar	..	..	..	..	..
1½ cups grated cheese	150	43	54	..	..
½ cup chopped stuffed olives	70	1	19	8	..
½ cup chopped celery	60	1	..	2	..
¼ cup chopped green pepper	25	..	..	1	..
½ cup cream, whipped	75	2	30	2	..
Total		51	103	13	1183
One serving		8.5	17	2	197

Soak gelatine in cold water. Bring hot water and salt to boil and dissolve gelatine in it. Add vinegar and set aside to chill. When nearly set, beat until frothy, fold in cheese, olives, celery, pepper and whipped cream. Turn into molds and chill until firm. Unmold on lettuce leaf and serve.

SPANISH CREAM (*Six Servings*)

	Grams	Prot.	Fat	Carb.	Cal.
1 tablespoon Knox Sparkling Gelatine	7	6	..	..	..
¼ cup cold water	..	..	..	..	..
1 cup milk	240	7	10	12	..
¾ cup boiling water	..	..	..	..	..
2 eggs	100	13	10.5	..	..
1½ teaspoons vanilla	..	..	..	..	..
Few grains salt	..	..	..	..	..
Total		26	20.5	12	336.5
One serving		4	3	2	56

Soak gelatine in cold water five minutes. Heat water and milk over boiling water, add gelatine and stir until dissolved. Separate eggs and beat yolks until lemon colored. Stir gelatine mixture slowly into egg yolks. Return to stove and cook over boiling water until mixture begins to thicken. Remove from stove, add vanilla and salt and chill. Beat egg whites until stiff and fold into jelly when almost set. Mold and chill until firm.

KNOX *is the real* GELATINE

IF you agree that recipes like the ones on this page will be helpful, write for our complete Diabetic Recipe Book—it contains dozens of valuable recommendations for the diabetic diet. We shall be glad to mail you as many copies as you desire. Knox Gelatine Laboratories, 435 Knox Ave., Johnstown, N. Y.

Name .....

Address .....

City .....

State .....

THE BLACKWELL HOSPITAL

Modern Operating Room
X-Ray and Laboratory Departments
Ambulance Service

A. S. RISSER, A.B., M.D., F.A.C.S
(Surgeon-in-Charge)
Blackwell, Okla.

Results . . . *more simply - more quickly*

Explains the Ever Increasing Use of S. M. A. by Physicians

1—Resembles **Breast Milk** both Physically and Chemically.
2—Only Fresh Milk from Tuberculin Tested Cows is Used as a Basis for the Production of S. M. A.
3—No Modification Necessary for Normal Full Term Infants.
4—Simple for the Mother to Prepare.
5—Prevents Rickets and Spasmophilia.
6—Results More Simply and More Quickly.

? SAMPLES ?

S.M.A. CORPORATION
CLEVELAND, OHIO

TIMBERLAWN SANITARIUM
for
Nervous and Mental Diseases

P. O. Box 1569 DALLAS, TEXAS Telephone 3-6333

Modern buildings, fully equipped for the proper scientific care and treatment of nervous and mental disorders. Drug addicts and alcoholics not accepted. Three separate buildings for patients. Spacious grounds with beautiful shade trees.

Resident Physician:
TOM H. CHEAVENS, A. B., M. D.

Medical Directors: JAMES J. TERRILL, M. D.
GUY F. WITT, B. S., M. D.

Relative Values of Carbohydrates

New Findings Confirm Old Truths

Recent scientific investigations in rats (tabulated at the right) are in accord with many years of clinical observations on babies, as shown by the following excerpts from authoritative medical literature reflecting the consensus of three decades of pediatric experience.

RELATIVE ASSIMILATION VALUES OF VARIOUS CARBOHYDRATES[1]

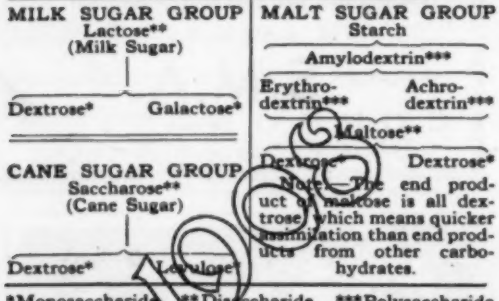
		Average per 100 gms. body weight
1	MALTOSE	1.50
2	DEXTRIN + MALTOSE	1.32
3	Glucose + dextrin	1.32
4	Glucose + sucrose	1.32
5	Glucose	1.04
6	Sucrose + maltose	0.98
7	Fructose + glucose	0.98
8	Sucrose + dextrin	0.76
9	Sucrose	0.76
10	Fructose	0.5
11	Glucose + lactose	0.26
12	Lactose	0.16
13	Galactose	0.1

These authors have also stated: "Maltose, fructose, glucose, starch and dextrin *lead* in nutritive value, *followed by* galactose, mannose, arabinose, xylose, lactose, sucrose and glycogen. [2]

1929

[1] H. Ariyama and K. Takahasi: *Biochem. Z.*, **216**:269 (1929) and [2] *J. Agr. Chem. Soc.*, Japan 5; 674 (1929).

CHART OF CARBOHYDRATE HYDROLYSIS[3]

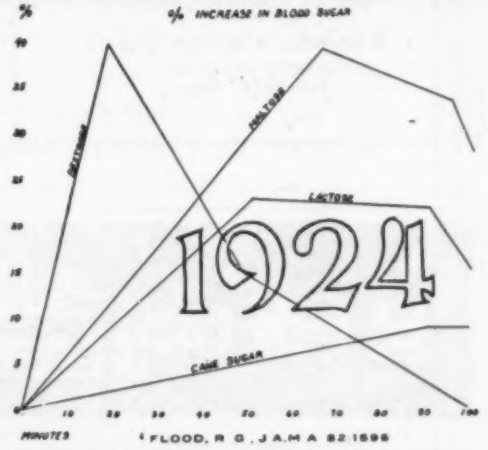


1929

Of the monosaccharides, dextrose, the end product of maltose, is converted into glycogen more easily than levulose or galactose. Therefore, maltose, which splits into two molecules of dextrose, may be absorbed with much less digestive energy than either lactose or saccharose.

[3] Morse, J. L. & Talbot, F. B. *Boston Med. & Surg. Jl.*, **159**:852.

RATE OF SUGAR ABSORPTION IN NEWBORN[4]



1924

MALTOSE OR LACTOSE IN INFANT FEEDING[5]

Answer—The superiority of one form of carbohydrate over another in artificial feeding of infants has been much discussed during recent years. It is generally accepted that cow's milk without modification is not a satisfactory infant food. So far as the carbohydrate is concerned, about one-fifth to one-eighth ounce per pound of infant's body weight is required daily. To supply this amount it is necessary to add carbohydrates in some form. Admitting that lactose is the sugar supplied in human milk, it does not follow that it is the sugar best tolerated in another medium, such as cow's milk. It is generally believed that lactose is more laxative than sucrose—that it must be fed with a certain amount of caution, as fermentative upsets are likely to follow if amounts approximating that found in human milk are fed. There is cause for disagreement among clinicians, as it is important to consider the other food elements; i.e., the amounts of fat and protein fed as well as the medium in which they are fed. For example, when lactic acid milk is used, more added carbohydrate seems to be tolerated than when sweet milk mixtures are fed. Sucrose has the advantage of being much cheaper and is always available. Evidence has not been presented that it should not be used in infant feeding. With its general use in large infant welfare clinics where supervision is a matter of routine, there is less to be said against it as far as clinical results are concerned. The complaint that it is too sweet is not often encountered when the usual amounts are fed. The dextrin-maltose preparations possess certain advantages. When they are added to cow's milk mixtures, we have a combination of three forms of carbohydrates, lactose, dextrin and maltose, all having different reactions in the intestinal tract and different absorption rates. Because of the relatively slower conversion of dextrins to maltose and then to dextrose, fermentative processes are less likely to develop. Those preparations containing relatively more maltose are more laxative than those containing a higher percentage of dextrin (unless alkali salts such as potassium salts are added). It is common experience clinically that larger amounts of dextrin-maltose preparations may be fed as compared with the simple sugars. Obviously, when there is a lessened sugar tolerance such as occurs in many digestive disturbances, dextrin-maltose compounds may be used to advantage. [5] *Queries and Minor Notes, J. A. M. A.*, 88:266.

1929

MEAD JOHNSON & COMPANY, EVANSVILLE, INDIANA, U. S. A., MAKERS OF DEXTRI-MALTOSE

THE BOY WHO FOUND RAINBOWS IN COAL-TAR

ONE Easter vacation in 1856, 17-year-old William Henry Perkin, a student-assistant in the Royal College of Chemistry, was toiling in an improvised laboratory under the eaves of his English home.

"Throw the rubbish away!" croaked unimaginative Common Sense, when the boy poured in a red fluid and got a dirty, sticky, dark mass at the bottom of his test tube. "Examine it!" whispered Science. "It may be worth something!"

Science was right. Out of that ugly dark mud came a lovely violet-purple dye. This "Mauve" was the first aniline dye ever made from coal-tar.

But young Perkin did more than found an industry. His experiments, and the experiments of other men in those early days, showed the way to a new, *creative* chemistry.

Men began to *build* with atoms.

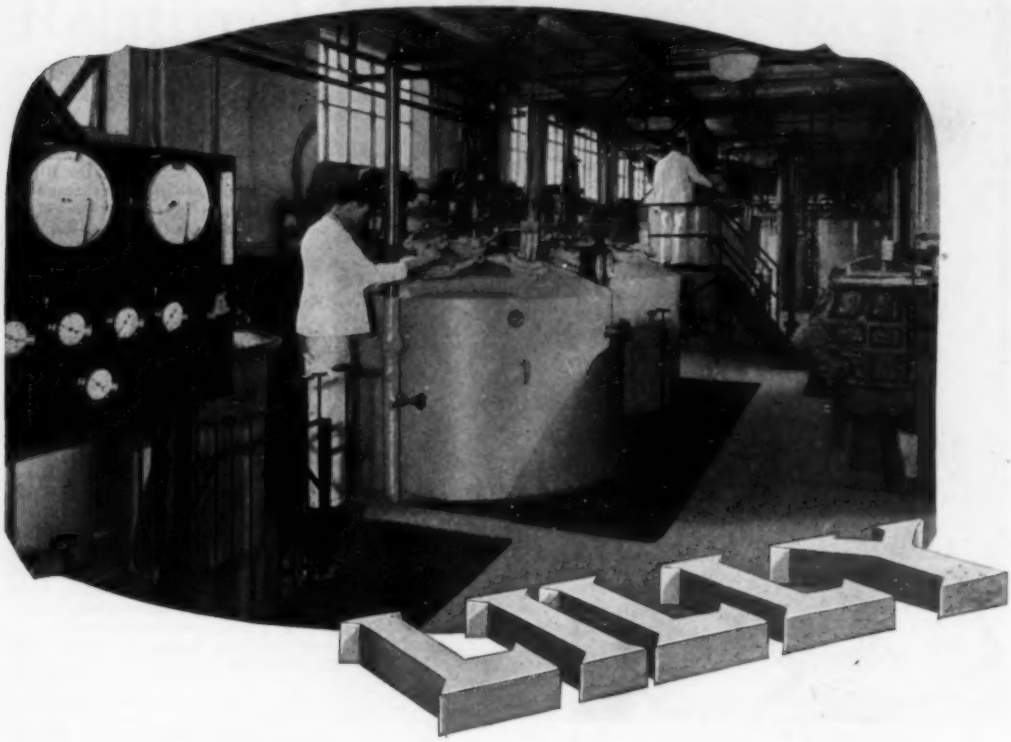
THE HOUSE OF RESEARCH

PARKE-DAVIS research chemists often spend years in producing a single synthetic chemical compound. For example, in a recent search for a synthetic drug to accomplish a certain purpose, hundreds of compounds were patiently built up. Each in turn was put to the severest tests. Finally *one* was obtained that met our exacting requirements.

Such is the spirit of the Parke-Davis laboratories. Steadfastly adhering to the high ideals that are woven into the fabric of the organization, stubbornly refusing to compromise with quality, the loyal men and women of our staff feel a keen personal pride in the confidence that the medical and pharmaceutical professions so willingly repose in the products which bear the Parke-Davis label.

PARKE, DAVIS & CO.

The world's largest makers of pharmaceutical and biological products



ALTHOUGH Iletin (Insulin, Lilly) is a delicate product, much ponderous equipment is required to produce it. These storage tanks are seen from their second floor level.—Laboratories of Eli Lilly and Company, Indianapolis, manufacturers of

Iletin (Insulin, Lilly)

THE FIRST INSULIN COMMERCIALLY AVAILABLE IN THE UNITED STATES

Among other important products of the Lilly Laboratories are

LIVER EXTRACT No. 343 — TABLETS AMYTAL

PULVULES SODIUM AMYTAL — PARA-THOR-MONE

EPHEDRINE PREPARATIONS

and an extensive line of pharmaceutical and biological products for use under the direction of physicians and advertised through professional channels only.

PROGRESS THROUGH RESEARCH

OFFICERS OKLAHOMA STATE MEDICAL ASSOCIATION

President, 1931-32, Dr. Henry C. Weber, Bartlesville.

President-elect, Dr. R. M. Anderson, Shawnee.

Secretary-Treasurer-Editor, Dr. Claude A. Thompson, Muskogee.

Meeting Place, Tulsa, Okla., May 24, 25 and 26, 1932.

Delegates to A. M. A.: Dr. Albert W. Cook, Tulsa, 1931-32; Dr. Horace Reed, Oklahoma City, 1931-32; Dr. McLain Rogers, Clinton, 1931, 1932-33.

STANDING COMMITTEES 1931-1932

Scientific Work. Dr. R. M. Howard, Chairman, Oklahoma City; Dr. P. P. Nesbitt, Tulsa; Dr. A. B. Chase, Oklahoma City; Dr. C. A. Thompson, Muskogee.

Public Policy and Legislation. Dr. J. M. Byrum, Chairman, Shawnee; Dr. R. V. Smith, Tulsa; Dr. McLain Rogers, Clinton.

Medical Defense. Dr. L. S. Willour, Chairman, McAlester; Dr. Wm. Gallaher, Shewnee: Dr. F. M. Adams, Vinita.

Medical Education and Hospitals. Dr. A. S. Risser, Chairman, Blackwell; Dr. A. W. White, Oklahoma City; Dr. Frank H. McGregor, Mangum.

Medical Economics. Dr. A. Ray Wiley, Chairman, Tulsa; Dr. W. H. Bailey, Oklahoma City; Dr. J. Hutchings White, Muskogee.

SPECIAL COMMITTEES 1931-1932

Tuberculosis Study and Control. Dr. L. J. Moorman, Chairman, Oklahoma City; Dr. F. B. Baker, Talihina; Dr. R. M. Shepard, Tulsa.

Conservation of Vision. Dr. W. A. Cook, Chairman, Tulsa; Dr. C. B. Barker, Guthrie; Dr. Milton K. Thompson, Muskogee.

Conservation of Hearing. Dr. L. C. McHenry, Chairman, Oklahoma City; Dr. Chas. M. Fullenwider, Muskogee. Dr. H. S. Brown, Ponca City.

Venereal Disease Control. Dr. Rex Bolend, Chairman, Oklahoma City; Dr. Henry S. Browne, Tulsa; Dr. S. D. Neely, Muskogee.

Cancer Study and Control. Dr. E. S. Lain, Chairman, Oklahoma City; Dr. James Stevenson, Tulsa; Dr. Frank McGregor, Mangum.

Contract and Industrial Practice. Dr. Pat Fite, Chairman, Muskogee; Dr. C. E. Clymer, Oklahoma City; Dr. A. Ray Wiley, Tulsa.

Crippled Children. Dr. Wade Sisler, Chairman, Tulsa; Dr. Earl D. McBride, Oklahoma City; Dr. W. K. West, Oklahoma City.

Necrology. Dr. Ellis Lamb, Chairman, Clinton; Dr. R. M. Anderson, Shawnee; Dr. J. S. Fulton, Atoka.

Publicity. Dr. C. A. Thompson, Muskogee.

STATE BOARD OF MEDICAL EXAMINERS

Dr. D. W. Miller, Blackwell, President; Dr. J. M. Byrum, Shawnee, Secretary; Dr. W. P. Fite, Muskogee; Dr. H. C. Weber, Bartlesville; Dr. W. T. Ray, Gould; Dr. L. E. Emanuel, Chickasha; Dr. Frank McGregor, Mangum.

STATE COMMISSIONER OF HEALTH

Dr. Geo. N. Bilby, Oklahoma City.

COUNCILORS AND THEIR COUNTIES

District No. 1. Texas, Beaver, Cimarron, Harper, Ellis, Woods, Woodward, Alfalfa, Major, Dewey, Dr. O. E. Templin, Alva (Term expires 1934).

District No. 2. Roger Mills, Beckham, Greer, Harmon, Washita, Kiowa, Custer, Jackson, Tillman. Dr. Frank H. McGregor, Mangum. (Term expires 1932).

District No. 3. Grant, Kay, Garfield, Noble, Payne, Pawnee. Dr. Paul B. Champlin, Enid. (Term expires 1932).

District No. 4. Blaine, Kingfisher, Canadian, Logan, Oklahoma, Cleveland. Dr. LeRoy Long, Sr., Oklahoma City. (Term expires 1932).

District No. 5: Caddo, Comanche, Cotton, Grady, Love, Stephens, Jefferson, Carter, Murray. Dr. J. C. Ambrister, Chickasha. (Term expires 1932).

District No. 6. Osage, Creek, Washington, Nowata, Rogers, Tulsa. Dr. W. A. Howard, Chelsea. (Term expires 1932).

District No. 7. Lincoln, Pottawatomie, Okfuskee, Seminole, McClain. Dr. Wm. M. Gallaher, Shawnee. (Term expires 1933).

District No. 8. Craig, Ottawa, Mayes, Delaware, Wagoner, Adair, Cherokee, Sequoyah, Okmulgee, Muskogee. Dr. F. M. Adams, Vinita. (Term expires 1933).

District No. 9. Hughes, Pittsburg, Haskell, Latimer, LeFlore, McIntosh. Dr. Leonard S. Willour, McAlester, (Term expires 1933).

District No. 10. Johnson, Marshall, Coal, Atoka, Bryan, Choctaw, Pushmataha, McCurtain. Dr. J. S. Fulton, Atoka. (Term expires 1933).

CLASSIFIED ADVERTISEMENTS

SITUATIONS WANTED — Salaried Appointments for Class A Physicians in all branches of the Medical Profession. Let us put you in touch with the best man for your opening. Our nation-wide connections enable us to give superior service, Aznoe's National Physicians' Exchange, 30 North Michigan, Chicago. Established 1896. Member The Chicago Association of Commerce.

FOR SALE—Set of "Practice of Medicine," by Tice—never used. Bargain for quick sale. Gertrude Taylor, Chelsea, Okla.

FOR SALE—Complete eye, ear, nose and throat office equipment. Mrs. Chas. L. Blanks, 264 West 15th St., Tulsa, Oklahoma.

Lac-Bismo

(HART)

See Description, Journal A. M. A. Volume XLVII, Page 1488.

A Scientific combination of Bismuth Subcarbonate and Hydrate suspended in water. Each fluidrachm contains 2½ grains of the combined salts in an extremely fine state of subdivision.

Medical Properties: Gastric Sedative, Antiseptic, Mild Astringent and Antacid.

Indications: In Gastro-Intestinal Diseases, Diarrhoea, Dysentery, Cholera-Infantum, etc. Also suitable for external use in cases of ulcers, etc.

E. J. HART & CO., Ltd., Mfg. Chemists
New Orleans

The Diagnostic Department of

RESEARCH HOSPITAL

23rd and Holmes Sts.

KANSAS CITY, MISSOURI

The Diagnostic Department of Research Hospital was established in November, 1924. Patients are received for diagnosis from reputable physicians. On completion of examination, reports, which include the patient's history, physical examination, laboratory and X-ray reports, the findings of various specialists and the final diagnosis with recommendations for treatment, are sent to the patient's physician—in no instance will reports be given to patients. The fee includes all necessary tests and examinations.

The following Departments are represented: Medicine, Surgery, Orthopedics, Neurology, Oto-Rhino-Laryngology, Ophthalmology, Urology, Dermatology, Gynecology, Pediatrics, Obsterics, Radiology, Pathology and Electrocardiography.

For further information address: The Diagnostic Department of Research Hospital, 23rd and Holmes Sts., Kansas City Mo.

THE ROBINSON CLINIC

Melancholia is a common condition found in adults of all ages. The chief symptom is a feeling of unworthiness and lack of desire to continue with the struggles and problems of life. Women, at the menopause, frequently resurrect some overt act committed early in life and dwell upon this, until it is magnified into an unpardonable sin. They have delusions that other members of their family are being punished for this sin.

Younger adults are seldom affected with the above formed delusions but have just as great a sense of their own unworthiness, but can seldom give such a clear and lucid account as to the cause.

All forms of melancholias and depressions must be guarded closely against suicide. Their own statements must not be given credence, because their mental reactions change so quickly; they may deny any thought of self-destruction one minute, and the next, be carefully planning to take their own life. Homes and hospitals offer so many opportunities for suicide, we believe the only safe place for these unfortunates is in a hospital with special equipment to handle these cases, and with carefully trained and watchful attendants; they must be constantly supervised.

—Curtis-Wright Flying Service

Treatment consists of removing the cause, in addition to the above supervision. Careful examinations must be done, to determine the cause. Gland extracts, sedatives, hydrotherapy and psychotherapy and specific treatment produce the best results.

DRUG AND ALCOHOL ADDICTION
G. Wilse Robinson, Jr., M.D.
Assoc. Medical Director.

G. WILSE ROBINSON, M.D. Medical Director
1432 Professional Bldg.
8100 Independence Road
Kansas City, Mo.

NERVOUS AND MENTAL DISEASES
Paul A. Johnson, M.D.
Internist

Founded 1896 by Dr. Hubert Work

H. A. LaMOURE, M.D., Superintendent

NEW BUILDINGS
NEW EQUIPMENT
NEURO—PSYCHIATRIC CLINIC
NERVOUS and MENTAL DISEASES
ALCOHOLISM and DRUG ADDICTIONS

Woodcroft Hospital
Pueblo, Colorado

THE WALLACE SANITARIUM

SUCCEEDING WALLACE-SOMERVILLE SANITARIUM, MEMPHIS, TENN.

MEMPHIS, TENN.

WALTER R. WALLACE, M.D.
HUGH W. PRIDDY, M.D.
FOR THE TREATMENT OF

DRUG ADDICTIONS,
ALCOHOLISM, MENTAL AND
NERVOUS DISEASES

LOCATED IN THE EASTERN SUBURBS OF THE CITY. SIXTEEN ACRES OF BEAUTIFUL GROUNDS. ALL EQUIPMENT FOR CARE OF PATIENTS ADMITTED.

PROFESSIONAL DIRECTORY

J. A. RUTLEDGE, M.D.
Practice Limited to
Surgery—Gynecology—Obstetrics
ADA, OKLAHOMA

ALFRED R. SUGG, A.B., M.D.
Urology and Gynecology
Ada, Oklahoma

OSCAR H. MILLER, M.D.
Eye, Ear, Nose and Throat
American Bldg.
Ada, Oklahoma

JOSEPH B. HIX, M.D.
Dermatology, Syphilology, Radium,
X-Ray and Electrotherapy
ALTUS, OKLA.

DR. WALTER HARDY
Surgeon
Hardy Sanitarium
Tel. 2600 Ardmore, Okla.

LEIGH F. WATSON, M.D.
Surgery and Diseases of the Thyroid
727 W. 7th St.
Los Angeles, Calif.

McLain Rogers, M.D., F.A.C.S.
DR. McLAIN ROGERS
Surgery
Clinton Hospital Clinton, Okla.

A. J. WEEDN, M.D.
Surgery, Gynecology and Obstetrics
Office at Weedn Hospital. Phone 624
Duncan, Oklahoma

DR. D. ARMSTRONG
Surgery and Medicine
Radium Service
Hospital and Laboratory Facilities
Durant, Oklahoma

DR. PHILIP F. HEROD
Eye, Ear, Nose and Throat
First National Bank Bldg.
EL RENO, OKLA.

DR. O. R. GREGG
Urology
403 American National Bank Building
Enid, Oklahoma
Phone 198

DRS. C. B. & PAULINE BARKER
Eye, Ear, Nose & Throat Specialists
Guthrie, Oklahoma **Phone 13**

Fowler Border, M.D.
Frank McGregor, M.D.
DRS. BORDER & McGREGOR
Surgery
All the Facilities of the Border-McGregor Hospital and Clinic
Mangum, Oklahoma

Dr. J. M. Postelle **Dr. Minard F. Jacobs**
DRS. POSTELLE & JACOBS
Practice Limited to Gastro-Enterology
Medical Arts Bldg., Oklahoma City, Okla.
Phone 3-7270

Phones— Office: 2-6128 2-6129; Res.: 4-1821
RAY M. BALYEAT, M.A., M.D., F.A.C.P.
Practice Limited to
Diseases Due to Allergy
600-620 Osler Building
1200 North Walker Oklahoma City, Okla.

ILETIN
INSULIN, LILLY

Insulin is preserving the lives of thousands of diabetics to whose ranks are added the yearly increment of new cases

Diabetic patients require medical attention more or less constantly, so with the increasing number of cases physicians have a growing responsibility to know Insulin and its proper use ... Iletin (Insulin, Lilly) was the first Insulin commercially available in the United States. It is pure, stable, uniform, and has given satisfactory results.

Pamphlets on Insulin, and Diet
Charts will be sent on request

ELI LILLY AND COMPANY
INDIANAPOLIS, U. S. A.

SODIUM AMYTAL LILLY

PULVULES
SODIUM AMYTAL
ADMINISTERED ORALLY
OR RECTALLY

Each Filled Capsule
Contains 3 Grains
Sodium iso amyl ethyl
barbiturate

Write for Literature
Supplied Through the
Drug Trade

Progress in Research

The New Treatment of Syphilis of the Nervous System

(tabes dorsalis, general paralysis, etc.)

by Artificial Fever (electrical diathermy)

The Safest, Surest and Best Controlled Method

IS NOW AVAILABLE AT

THE MENNINGER PSYCHIATRIC HOSPITAL and THE MENNINGER SANITARIUM

OUT-PATIENTS ACCEPTED

C. F. MENNINGER, M. D.
KARL A. MENNINGER, M. D.
JOHN R. STONE.

Address all inquiries to
DR. WM. C. MENNINGER, Topeka, Kans.

Group of Patients

THE FARM SANATORIUM

Dr. L. J. Moorman, Medical Director

Miss Agnes Algar-Guerin, R.N., Superintendent

A modern sixty-bed institution for the treatment of lung and heart cases. The most approved methods of treatment are employed—including all the surgical procedures recommended in the treatment of tuberculosis.

Address all communications to

Dr. L. J. Moorman
304 Osler Bldg.—1200 N. Walker
Oklahoma City, Oklahoma

DR. WHITE'S SANITARIUM

FOR NERVOUS AND MENTAL DISORDERS, ALCOHOL AND DRUG ADDICTIONS

WICHITA FALLS, TEXAS

C. W. Stevenson, M.D., F.A.C.P., Medical Director

A. T. Hauretta, M.D., Assistant Medical Director and Resident Physician

Modern fire proof building. All latest methods of diagnosis and treatment.

C. W. STEVENSON M.D.
Consulting Internist

ST. JOHNS HOSPITAL AND HOLT CLINIC

Fort Smith, Arkansas

RADIUM SUFFICIENT FOR ALL TREATMENT

Complete X-Ray and Laboratory Service

Including

Metabolic Blood Chemistry and Wassermann

PROFESSIONAL DIRECTORY

LAIN-ROLAND CLINIC

Dermatology, Radium and X-Ray Therapy
Medical Arts Building
Oklahoma City, Oklahoma

Everett S. Lain, M.D., F.A.C.P.
Wm. E. Eastland, B.S., M.D.
Marion M. Roland, M.D.
Chas. E. Davis, M.D.
Darrell G. Duncan, B.S., M.D.

J. W. SHELTON, M.D.
Eye, Ear, Nose and Throat
Slit-Lamp and Audiometer Equipment
Suite 1013 Medical Arts Bldg.
Oklahoma City, Okla.

M. S. GREGORY, M.D.

Nervous and Mental Diseases

708 Medical Arts Bldg. Oklahoma City

BASIL A. HAYES, M.D.
Genito-Urinary and Rectal Surgery
418 Osler Building
Oklahoma City, Oklahoma

DR. JOHN E. HEATLEY
Practice Limited to
RADIOLOGY
1115 Medical Arts Bldg. Oklahoma City

DR. A. C. HIRSHFIELD
Gynecology and Obstetrics
407 Medical Arts Building
Oklahoma City

EARL D. McBRIDE, M.D., F.A.C.S.
ELIAS MARGO, M.D. E. GOLDFAIN, M.D.
Orthopedic Surgery, Industrial Injuries, Fractures
THE RECONSTRUCTION HOSPITAL & McBRIDE CLINIC
717 North Robinson Oklahoma City, Okla.

D. D. McHenry, M.D. L. C. McHenry, M.D.
DRS. McHENRY & McHENRY
Diseases of Eye, Ear, Nose, Throat
Bronchoscopy and Esophagoscopy
604 Medical Arts Bldg.—Oklahoma City
Telephones: Office 3-7491; Res., 3-1510, 5-2518

DR. RAYMOND L. MURDOCH
DR. H. H. CLOUDMAN
Diseases of the Rectum
711 Medical Arts Bldg. Oklahoma City

CARROLL M. POUNDERS, M.D., F.A.C.P.
Pediatrics
504 Osler Bldg.—1200 North Walker Street
Oklahoma City

JOHN A. RECK, M.D.
Obstetrics and Gynecology Consultation
Phone Walnut 0194
609 Colcord Bldg. Oklahoma City

DR. HORACE REED
Practice Limited to
Surgery and Consultation
Active Services at St. Anthony Hospital
State University Hospital
Osler Building, 1200 N. Walker
Oklahoma City, Okla.

DR. ELIJAH S. SULLIVAN
Urologist
Phone 3-7615
1009 Medical Arts Bldg. Oklahoma City

DR. C. von WEDEL
Plastic Surgery
312 Colcord Building
Oklahoma City

W. J. WALLACE, M.D.
Urology—Syphilology
405 Medical Arts Building
Oklahoma City

Announcing

The Arthritis Service

OF THE

Reconstruction Hospital and McBRIDE Clinic

717-723 North Robinson Street

OKLAHOMA CITY, OKLA.

OFFERING

Orthopedic-Medical-Hospital Care of Rheumatic Cases

I. Thorough diagnostic investigation.

II. Arthritis Laboratory Research by Recently Developed Methods:

1. Bacteriological isolation of organisms in the infected foci.
2. Application of modified Wassermann and agglutination tests in identifying the organisms causing the arthritis.
3. VACCINES prepared for the physician, based on above tests.

III. Physical therapy, Medical Gymnastics, Hydrotherapy.

IV. Surgical Appliances.

Earl D. McBride, M.D., F.A.C.S
Surgical Director

E. Goldfain, M.D.
Medical Director

Elias Margo, M. D.
Orthopedic Surgeon

Peggy J. Humes, R.T.
Technician

PROFESSIONAL DIRECTORY

WALTER W. WELLS, M.D., F.A.C.S.
Obstetrics and Gynecology
1209 Medical Arts Bldg.
Oklahoma City

DR. HENRY H. TURNER
Practice Limited to
Neurology and Endocrinology
316-319 Osler Medical Bldg.
1200 N. Walker Oklahoma City, Okla.

DR. FRANTZ B. ERWIN
Nervous and Mental Diseases
408 Medical Arts
Oklahoma City, Oklahoma

ARTHUR W. WHITE, A.M., M.D.
Diseases of the Stomach and Intestines
Phones: Office, M-0677
Residence, 4-5634
510 Medical Arts Oklahoma City

W. K. WEST
C. R. ROUNTREE
Bone and Joint Surgery
Osler Building
Oklahoma City, Oklahoma

DR. C. J. FISHMAN
Now Located at
132 W. 4th St., Oklahoma City
Practice Limited to
Diagnosis and Consultation

C. P. BONDURANT, B.S., M.D.
Practice Limited to
Dermatology, Syphilology, X-Ray and Radium Therapy
413 Medical Arts Building
Oklahoma City, Okla.

DR. R. M. HOWARD
Practice Limited to
Surgery and Diseases of the Thyroid Gland
Active Service at St. Anthony's Hospital
State University Hospital
1103-5 Medical Arts Bldg. Oklahoma City

C. L. BRUNDAGE, M.D., M.Sc.
Dermatology and Radiotherapy
615 Medical Arts Building
Oklahoma City, Oklahoma

OKMULGEE CLINIC
Okmulgee, Okla.
Complete Clinical Facilities
Surgery-Diagnosis-Radium-X-ray
W. C. Mitchener, M.D.
W. W. Stark, M.D. C. M. Ming, M.D.
L. B. Windham, M.D. W. C. Vernon, M. D.

DR. J. M. BYRUM
General Surgery and Gynecology
Hospital and Laboratory Facilities
Shawnee, Oklahoma

DR. W. P. LONGMIRE
Surgery and Gynecology
OFFICE:
9 East Dewey Ave.
Sapulpa, Oklahoma

DR. HARRY GREEN
Practice Limited to
Dermatology, X-Ray and Radium Therapy
1115-1116 Medical Arts Building—Tulsa, Okla.

CHAS. H. HARALSON, M.D., F.A.C.S.
Practice Limited to
EYE
816 Medical Arts Bldg.
Tulsa, Okla.

W. ALBERT COOK, M.D., F.A.C.S.
Eye, Ear, Nose and Throat
1107 Medical Arts Building
Tulsa, Okla.
Phones: Office, 6008; Residence 3-0003

P. P. NESBITT, M.D., F.A.C.S.
Surgery
916-917 Medical Arts Bldg, Tulsa
Phones: Office, 2-8284; Res. 3-1730

BALYEAT HAY FEVER AND ASTHMA CLINIC
Devoted exclusively to the study and treatment of diseases due to Allergy
Osler Building
Oklahoma City, Okla.
Ray M. Balyeat, M.A., M.D., F.A.C.P Herbert J. Rinkel, M.D.

THE POLYCLINIC HOSPITAL

New fire-proof; finely appointed, elaborately furnished and equipped, carrying out the small details for the patients' comfort and care.

Will appreciate your patronage and will endeavor to return the patients satisfied with your services as well as those of the institution.

We are prepared to care for your X-Ray and Laboratory work.

Built and Conducted by

Marvin E. Stout

13th and Robinson

Oklahoma City, Oklahoma

THE OKLAHOMA HOSPITAL AND SANITARIUM

(Formerly known as the Oklahoma Hospital)

West Ninth and Jackson Streets,

TULSA, OKLAHOMA

An institution exclusively for nervous and mental diseases.

Especially desirable for rest cures and convalescents.

All requirements in accomodations can be supplied, from room with private baths to beds in small wards.

The Hydrotherapy Department is complete and includes the valuable Hydro-Electric Bath.

All recognized forms of therapy employed. Consulting staff covers all phases of diagnosis and treatment.

RATES STRICTLY REASONABLE

NED R. SMITH, M.D., Medical Director
703 Medical Arts Bldg.

Daisy N. Neese, Superintendent T. N. Neese, Business Mgr.

For Information or Rates Address The Sanitarium or The Medical Director.

PROFESSIONAL DIRECTORY

C. M. AMENT, M.A., M.D., Ph.B.
Abdominal and Pelvic Surgery
602 Security National Bank Bldg.
Tulsa, Oklahoma

DR. C. E. BRADLEY
Practice Limited to Diseases of Children
202 Medical Arts Bldg. Tulsa, Oklahoma

HENRY S. BROWNE, M.D.
Practice Limited to
UROLOGY
614 Medical Arts Bldg. Tulsa, Oklahoma

W. J. TRAINOR, M.D.
Internal Medicine
Specializing in Heart and Electrocardiography
1011 Medical Arts Bldg.
TULSA, OKLAHOMA

MEDICAL ARTS LABORATORIES
Successors to The
Terrell's and Larrabee-Markland Laboratories
X-ray-Clinical-Serological-Pathological
Bacteriological
W. S. Larabee 411-16 Medical Arts Bldg.
J. R. Anderson Phone 43111
Jas. D. Markland Tulsa, Okla.

H. W. FORD, M.D.
ELECTROTHERAPY
608 Tulsa Trust Building
TULSA

VICTOR K. ALLEN, M.D.
Diseases of Rectum and Colon
1001 Medical Arts Building
Tulsa, Oklahoma

NED R. SMITH, A.M., M.S., Dr. Ph., M.D.
Neurology and Psychiatry
703 Medical Arts Building
TULSA, OKLAHOMA

PIERRE N. CHARBONNET, M.D.
Practice Limited to
Gynecology and Obstetrics
Suite 206-7 Medical Arts Building
Tulsa, Oklahoma

FRED S. CLINTON, M.D., F.A.C.S.
BENJ. W. WARD, M.D.
Suite 823 Wright Bldg.,
TULSA, OKLAHOMA

DR. JAMES STEVENSON
Practice Limited to
Dermatology, Radium and X-Ray Therapy
615 Medical Arts Bldg. Tulsa, Oklahoma

DR. RALPH V. SMITH
Practice Limited to Surgery
607 Medical Arts Bldg.
Tulsa

CHARLES D. F. O'HERN, M.D., F.A.C.S.
Surgery, Gynecology and Obstetrics
501 Medical Arts Building
Tulsa, Oklahoma
Phones: Office, 3-2310; Res. 3-5358

A. W. ROTH, M.D., F.A.C.S.
607 Medical Arts Building
Tulsa, Okla.
Practice Limited to Diseases of
Eye, Ear, Nose and Throat

CORNELIUS OLIVER BAILEY, M.D., F.A.C.P.
Fellow Royal Society of Arts, London
Temporarily absent from the city for the purpose of post-graduate study in the treatment of cancer and allied diseases.
DALLAS, TEXAS

4538